

WHAT IS CLAIMED IS:

1. A coded signal separating and merging system comprising:

5 a coded signal separating apparatus for inputting a first coded moving picture sequence signal to separate into a second coded moving picture sequence signal and a differential coded moving picture sequence signal; and

a coded signal merging apparatus for inputting said second coded moving picture sequence signal and said differential coded moving picture sequence signal to reconstruct said first coded moving picture sequence signal,

10 said coded signal separating apparatus including:

inputting means for inputting said first coded moving picture sequence signal therethrough, said first coded moving picture sequence signal generated as a result of encoding original moving picture sequence signal and consisting of a series of first picture information having first coefficient information, said first coefficient
15 information including a matrix of first coefficients;

coded signal converting means for converting said first coded moving picture sequence signal inputted through said inputting means to generate said second coded moving picture sequence signal, said second coded moving picture sequence signal consisting of a series of second picture information having second coefficient
20 information, said second coefficient information including a matrix of second coefficients, each of said first coded moving picture sequence signal, and said second coded moving picture sequence signal is in the form of a hierarchical structure including one or more sequence layers each having a plurality of screens sharing common information, one or more picture layers each having a plurality of slices sharing
25 common information with respect to one of said screens, one or more slice layers each having a plurality of macroblocks with respect to one of said slices, one or more macroblock layers each having a plurality of blocks with respect to one of said macroblocks, and one or more block layers each having block information with respect to one of said blocks;

30 differential coded signal generating means for inputting said first coded moving picture sequence signal and said second coded moving picture sequence signal from said coded signal converting means to generate a differential coded moving picture sequence signal on the basis of said first coefficient information obtained from said series of first picture information of said first coded moving picture sequence signal,
35 and said second coefficient information obtained from said series of said second picture information of said second coded moving picture sequence signal, said differential

coded moving picture sequence signal being a difference between said first coded moving picture sequence signal and said second coded moving picture sequence signal;

separating storage means for selectively storing said first coded moving picture sequence signal, said second coded moving picture sequence signal, and said
5 differential coded moving picture sequence signal; and

first transmission means for selectively transmitting said first coded moving picture sequence signal, said second coded moving picture sequence signal, and said differential coded moving picture sequence signal to said coded signal merging apparatus;

10 said coded signal merging apparatus including:

first receiving means for receiving a base coded moving picture sequence signal transmitted by said first transmission means from said coded signal separating apparatus, said base coded moving picture sequence signal being any one of said first coded moving picture sequence signal, said second coded moving picture sequence
15 signal, and said differential coded moving picture sequence signal;

merging storage means for storing coded moving picture sequence signal including said base coded moving picture sequence signal received by said first receiving means;

request signal determining means for determining a request signal for a requested coded moving picture sequence signal on the basis of said base coded moving picture sequence signal stored by said merging storage means; and
20

request signal transmission means for transmitting said request signal for said requested coded moving picture sequence signal determined by said request signal determining means to said coded signal separating apparatus;

25 whereby said coded signal separating apparatus further includes:

request signal receiving means for receiving said request signal transmitted by said request signal transmission means from said coded signal merging apparatus;

separating coded signal extracting means for extracting said requested coded moving picture sequence signal from said separating storage means in response to said
30 request signal; and

second transmission means for transmitting said requested coded moving picture sequence signal extracted by said separating coded signal extracting means to said coded signal merging apparatus;

said coded signal merging apparatus includes:

35 second receiving means for receiving said requested coded moving picture sequence signal transmitted by said second transmission means from said coded signal

separating apparatus;

merging coded signal extracting means for extracting said base coded moving picture sequence signal from said merging storage means;

merging means for merging said base coded moving picture sequence signal
5 extracted by said merging coded signal extracting means with said requested coded moving picture sequence signal received by said second receiving means on the basis of said second coefficient information obtained from said series of second picture information of said second coded moving picture sequence signal, and said differential coefficient information obtained from said differential coded signal to reconstruct said
10 first coded moving picture sequence signal; and

outputting means for inputting said reconstructed first coded moving picture sequence signal from said merging means to be outputted therethrough.

2. A coded signal separating and merging system as set forth in claim 1, in which
15 said separating storage means of said coded signal separating apparatus is operative to store said differential coded moving picture sequence signal generated by said differential coded signal generating means,

said first transmission means is operative to transmit said second coded moving picture sequence signal generated by said coded signal converting means,

20 said first receiving means of said coded signal merging apparatus is operative to receive said second coded moving picture sequence signal transmitted by said first transmission means,

said merging storage means is operative to store said second coded moving picture sequence signal received by said first receiving means,

25 said request signal determining means is operative to determine a request signal for a requested differential coded moving picture sequence signal on the basis of said second coded moving picture sequence signal stored by said merging storage means,

said request signal transmission means is operative to transmit said request signal for said requested differential coded moving picture sequence signal determined
30 by said request signal determining means,

said request signal receiving means of said coded signal separating apparatus is operative to receive said request signal transmitted by said request signal transmission means,

35 said separating coded signal extracting means is operative to extract said requested differential coded moving picture sequence signal from said separating storage means in response to said request signal,

said second transmission means is operative to transmit said requested differential coded moving picture sequence signal extracted by said separating coded signal extracting means to said coded signal merging apparatus,

5 said second receiving means of said coded signal merging apparatus is operative to receive said requested differential coded moving picture sequence signal transmitted by said second transmission means from said coded signal separating apparatus,

said merging coded signal extracting means is operative to extract said second coded moving picture sequence signal from said merging storage means, and

10 said merging means is operative to merge said second coded moving picture sequence signal extracted by said merging coded signal extracting means with said requested differential coded moving picture sequence signal received by said second receiving means to reconstruct said first coded moving picture sequence signal.

15 3. A coded signal separating and merging system as set forth in claim 2, in which said coded signal merging apparatus further includes second coded moving picture sequence signal decoding means for decoding said second coded moving picture sequence signal received by said first receiving means.

20 4. A coded signal separating and merging system as set forth in claim 2 or claim 3, in which

25 said coded signal merging apparatus further includes editing means for cutting and combining component parts of said second coded moving picture sequence signal stored by said merging storage means to generate an edited second coded moving picture sequence signal in a desired size,

said request signal determining means is operative to determine a request signal for a requested differential coded moving picture sequence signal on the basis of said edited second coded moving picture sequence signal generated by said editing means,

30 said request signal transmission means is operative to transmit said request signal for said requested differential coded moving picture sequence signal determined by said request signal determining means to said coded signal separating apparatus,

35 said separating coded signal extracting means of said separating coded signal separating apparatus is operative to extract said requested differential coded moving picture sequence signal from said separating storage means in response to said request signal, and

said merging means is operative to merge said edited second coded moving

picture sequence signal generated by said editing means with said requested differential coded moving picture sequence signal received by said second receiving means to reconstruct said first coded moving picture sequence signal in said desired size.

5 5. A coded signal separating and merging system as set forth in claim 1, in which said separating storage means of said coded signal separating apparatus is operative to store said second coded moving picture sequence signal generated by said coded signal converting means,

10 said first transmission means is operative to transmit said differential coded moving picture sequence signal generated by said differential coded signal generating means to said coded signal merging apparatus,

said first receiving means of said coded signal merging apparatus is operative to receive said differential coded moving picture sequence signal transmitted by said first transmission means,

15 said merging storage means is operative to store said differential coded moving picture sequence signal received by said first receiving means,

20 request signal determining means is operative to determine a request signal for a requested second coded moving picture sequence signal on the basis of said differential coded moving picture sequence signal stored by said merging storage means,

said request signal transmission means is operative to transmit said request signal for said requested second coded moving picture sequence signal determined by said request signal determining means,

25 said request signal receiving means of said coded signal separating apparatus is operative to receive said request signal transmitted by said request signal transmission means,

said separating coded signal extracting means is operative to extract said requested second coded moving picture sequence signal from said separating storage means in response to said request signal,

30 said second transmission means is operative to transmit said requested second coded moving picture sequence signal extracted by said separating coded signal extracting means to said coded signal merging apparatus,

35 said second receiving means of said coded signal merging apparatus is operative to receive said requested second coded moving picture sequence signal transmitted by said second transmission means from said coded signal separating apparatus,

said merging coded signal extracting means is operative to extract said differential coded moving picture sequence signal stored by said merging storage means, and

5 said merging means is operative to merge said differential coded moving picture sequence signal extracted by said merging coded signal extracting means with said second coded moving picture sequence signal received by said second receiving means to reconstruct said first coded moving picture sequence signal.

6. A coded signal separating and merging system as set forth in claim 5, in which
10 said first transmission means of said coded signal separating apparatus is operative to transmit said differential coded moving picture sequence signal by way of broadcasting.

7. A coded signal separating and merging system as set forth in any one of claim
15 2, claim 3, and 6, in which

 said coded signal merging apparatus further includes reconstructed first coded signal storage means for storing said reconstructed first coded moving picture sequence signal reconstructed by said merging means.

8. A coded signal separating and merging system as set forth in claim 1, in which
20 said coded signal merging apparatus further includes:

 decoding means for decoding said first coded moving picture sequence signal or said second coded moving picture sequence signal; and

25 merging coded signal converting means for inputting said first coded moving picture sequence signal to generate said second coded moving picture sequence signal,

 said first transmission means of said coded signal separating apparatus is operative to transmit said first coded moving picture sequence signal,

30 said separating storage means is operative to store said differential coded moving picture sequence signal generated by said differential coded signal generating means,

 said first receiving means of said coded signal merging apparatus is operative to receive said first coded moving picture sequence signal transmitted by said first transmission means from said coded signal separating apparatus,

35 said decoding means is operative to decode said first coded moving picture sequence signal received by said first receiving means,

 said merging coded signal converting means is operative to input said first

coded moving picture sequence signal received by said first receiving means to generate said second coded moving picture sequence signal,

said merging storage means is operative to store said second coded moving picture sequence signal generated by said merging coded signal converting means,

5 said request signal determining means is operative to determine a request signal for a requested differential coded moving picture sequence signal on the basis of said second coded moving picture sequence signal stored by said merging storage means,

10 said request signal transmission means is operative to transmit said request signal for said requested differential coded moving picture sequence signal determined by said request signal determining means to said coded signal separating apparatus,

 said request signal receiving means of said coded signal separating apparatus is operative to receive said request signal transmitted by said request signal transmission means from said coded signal merging apparatus,

15 said separating coded signal extracting means is operative to extract said requested differential coded moving picture sequence signal from said separating storage means in response to said request signal,

 said second transmission means is operative to transmit said requested differential coded moving picture sequence signal extracted by said separating coded signal extracting means to said coded signal merging apparatus,

20 said second receiving means of said coded signal merging apparatus is operative to receive said requested differential coded moving picture sequence signal transmitted by said second transmission means from said coded signal separating apparatus,

25 said merging coded signal extracting means is operative to extract said second coded moving picture sequence signal from said merging storage means, and

30 said merging means is operative to merge said second coded moving picture sequence signal extracted by said merging coded signal extracting means with said requested differential coded moving picture sequence signal received by said second receiving means to reconstruct said first coded moving picture sequence signal in said desired size.

9. A coded signal separating and merging system as set forth in claim 1, in which said coded signal merging apparatus further includes:

35 decoding means for decoding said first coded moving picture sequence signal or said second coded moving picture sequence signal; and

 merging differential coded signal generating means for inputting said first

coded moving picture sequence signal to generate said differential coded moving picture sequence signal,

said first transmission means of said coded signal separating apparatus is operative to transmit said first coded moving picture sequence signal,

5 said separating storage means is operative to store said second coded moving picture sequence signal generated by said coded signal converting means,

said first receiving means of said coded signal merging apparatus is operative to receive said first coded moving picture sequence signal transmitted by said first transmission means from said coded signal separating apparatus,

10 said decoding means is operative to decode said first coded moving picture sequence signal received by said first receiving means,

said merging differential coded signal generating means is operative to input said first coded moving picture sequence signal received by said first receiving means to generate said differential coded moving picture sequence signal,

15 said merging storage means is operative to store said differential coded moving picture sequence signal generated by said merging coded signal converting means,

said request signal determining means is operative to determine a request signal for a requested second coded moving picture sequence signal on the basis of said differential coded moving picture sequence signal stored by said merging storage means,

20 said request signal transmission means is operative to transmit said request signal for said requested second coded moving picture sequence signal determined by said request signal determining means to said coded signal separating apparatus,

25 said request signal receiving means of said coded signal separating apparatus is operative to receive said request signal transmitted by said request signal transmission means from said coded signal merging apparatus,

said separating coded signal extracting means is operative to extract said requested second coded moving picture sequence signal from said separating storage means in response to said request signal,

30 said second transmission means is operative to transmit said requested second coded moving picture sequence signal extracted by said separating coded signal extracting means to said coded signal merging apparatus,

35 said second receiving means of said coded signal merging apparatus is operative to receive said requested second coded moving picture sequence signal transmitted by said second transmission means from said coded signal separating apparatus,

said merging coded signal extracting means is operative to extract said differential coded moving picture sequence signal from said merging storage means, and

5 said merging means is operative to merge said differential coded moving picture sequence signal extracted by said merging coded signal extracting means with said requested second coded moving picture sequence signal received by said second receiving means to reconstruct said first coded moving picture sequence signal in said desired size.

10 10. A coded signal separating apparatus for inputting a first coded moving picture sequence signal to separate into a second coded moving picture sequence signal and a differential coded moving picture sequence signal comprising:

15 inputting means for inputting said first coded moving picture sequence signal therethrough, said first coded moving picture sequence signal generated as a result of encoding original moving picture sequence signal and consisting of a series of first picture information having first coefficient information, said first coefficient information including a matrix of first coefficients;

20 coded signal converting means for converting said first coded moving picture sequence signal inputted through said inputting means to generate said second coded moving picture sequence signal, said second coded moving picture sequence signal consisting of a series of second picture information having second coefficient information, said second coefficient information including a matrix of second coefficients, each of said first coded moving picture sequence signal, and said second coded moving picture sequence signal is in the form of a hierarchical structure including
25 one or more sequence layers each having a plurality of screens sharing common information, one or more picture layers each having a plurality of slices sharing common information with respect to one of said screens, one or more slice layers each having a plurality of macroblocks with respect to one of said slices, one or more macroblock layers each having a plurality of blocks with respect to one of said
30 macroblocks, and one or more block layers each having block information with respect to one of said blocks;

35 differential coded signal generating means for inputting said first coded moving picture sequence signal and said second coded moving picture sequence signal from said coded signal converting means to generate a differential coded moving picture sequence signal on the basis of said first coefficient information obtained from said series of first picture information of said first coded moving picture sequence signal,

and said second coefficient information obtained from said series of said second picture information of said second coded moving picture sequence signal, said differential coded moving picture sequence signal being a difference between said first coded moving picture sequence signal and said second coded moving picture sequence signal;

5 separating storage means for selectively storing said first coded moving picture sequence signal, said second coded moving picture sequence signal, and said differential coded moving picture sequence signal;

first transmission means for selectively transmitting said first coded moving picture sequence signal, said second coded moving picture sequence signal, and said
10 differential coded moving picture sequence signal;

request signal receiving means for receiving a request signal indicative of a requested coded moving picture sequence signal to be transmitted, said request signal indicative of said requested coded moving picture sequence signal being determined on the basis of said first coded moving picture sequence signal, said second coded moving
15 picture sequence signal, or said differential coded moving picture sequence signal;

separating coded signal extracting means for extracting said requested coded moving picture sequence signal from said separating storage means in response to said request signal; and

second transmission means for transmitting said requested coded moving
20 picture sequence signal extracted by said separating coded signal extracting means.

11. A coded signal separating apparatus as set forth in claim 10, in which

said separating storage means is operative to store said differential coded moving picture sequence signal generated by said differential coded signal generating
25 means,

said first transmission means is operative to transmit said second coded moving picture sequence signal generated by said coded signal converting means,

said request signal receiving means is operative to receive said request signal indicative of a requested differential coded moving picture sequence signal to be transmitted, said request signal indicative of said requested differential coded moving
30 picture sequence signal being determined on the basis of said second coded moving picture sequence signal,

said separating coded signal extracting means is operative to extract said requested differential coded moving picture sequence signal from said separating
35 storage means in response to said request signal, and

said second transmission means is operative to transmit said requested

differential coded moving picture sequence signal extracted by said separating coded signal extracting means.

12. A coded signal separating apparatus as set forth in claim 11, in which

5 said request signal receiving means is operative to receive said request signal indicative of said requested differential coded moving picture sequence signal to be transmitted, said request signal indicative of said requested differential coded moving picture sequence signal being determined on the basis of an edited second coded moving picture sequence signal generated by cutting and combining component parts of
10 said second coded moving picture sequence signal,

said separating coded signal extracting means is operative to extract said requested differential coded moving picture sequence signal from said separating storage means in response to said request signal, and

15 said second transmission means is operative to transmit said requested differential coded moving picture sequence signal extracted by said separating coded signal extracting means.

13. A coded signal separating apparatus as set forth in claim 10, in which

20 said separating storage means is operative to store said second coded moving picture sequence signal generated by said coded signal converting means,

said first transmission means is operative to transmit said differential coded moving picture sequence signal generated by said differential coded signal generating means,

25 said request signal receiving means is operative to receive said request signal indicative of said requested second coded moving picture sequence signal to be transmitted, said request signal indicative of said requested second coded moving picture sequence signal being determined on the basis of said differential coded moving picture sequence signal,

30 said separating coded signal extracting means is operative to extract said requested second coded moving picture sequence signal from said separating storage means in response to said request signal, and

said second transmission means is operative to transmit said requested second coded moving picture sequence signal extracted by said separating coded signal extracting means.

35 14. A coded signal separating apparatus as set forth in claim 13, in which

said first transmission means is operative to transmit said differential coded moving picture sequence signal by way of broadcasting.

15. A coded signal separating apparatus as set forth in claim 10, in which

5 said first transmission means is operative to transmit said first coded moving picture sequence signal,

said separating storage means is operative to store said differential coded moving picture sequence signal generated by said differential coded signal generating means,

10 said request signal receiving means is operative to receive said request signal indicative of a requested differential coded moving picture sequence signal to be transmitted, said request signal indicative of said requested differential coded moving picture sequence signal being determined on the basis of a second coded moving picture sequence signal generated in accordance with said first coded moving picture sequence
15 signal,

said separating coded signal extracting means is operative to extract said requested differential coded moving picture sequence signal from said separating storage means in response to said request signal, and

20 said second transmission means is operative to transmit said requested differential coded moving picture sequence signal extracted by said separating coded signal extracting means.

16. A coded signal separating apparatus as set forth in claim 10, in which

25 said first transmission means is operative to transmit said first coded moving picture sequence signal,

said separating storage means is operative to store said second coded moving picture sequence signal generated by said coded signal converting means,

30 said request signal receiving means is operative to receive said request signal indicative of a requested second coded moving picture sequence signal to be transmitted, said request signal indicative of said requested second coded moving picture sequence signal being determined on the basis of a differential coded moving picture sequence signal generated in accordance with said first coded moving picture sequence signal,

35 said separating coded signal extracting means is operative to extract said requested second coded moving picture sequence signal from said separating storage means in response to said request signal, and

said second transmission means is operative to transmit said requested second

coded moving picture sequence signal extracted by said separating coded signal extracting means.

17. A coded signal merging apparatus for inputting a second coded moving picture
5 sequence signal and a differential coded moving picture sequence signal to reconstruct a
first coded moving picture sequence signal, said second coded moving picture sequence
signal generated as a result of transcoding said first coded moving picture sequence
signal and consisting of a series of second picture information having second coefficient
10 information, said second coefficient information including a matrix of second
coefficients, said first coded moving picture sequence signal generated as a result of
encoding original moving picture sequence signal and consisting of a series of first
picture information having first coefficient information, said first coefficient
15 information including a matrix of first coefficients, said differential coded moving
picture sequence signal being a difference between said first coded moving picture
sequence signal and said second coded moving picture sequence signal, said differential
coded moving picture sequence signal including differential coefficient information
between said first coefficient information and said second coefficient information, each
20 of said first coded moving picture sequence signal, said second coded moving picture
sequence signal, and said differential coded moving picture sequence signal is in the
form of a hierarchical structure including one or more sequence layers each having a
plurality of screens sharing common information, one or more picture layers each
having a plurality of slices sharing common information with respect to one of said
25 screens, one or more slice layers each having a plurality of macroblocks with respect to
one of said slices, one or more macroblock layers each having a plurality of blocks with
respect to one of said macroblocks, and one or more block layers each having block
information with respect to one of said blocks, said coded signal merging apparatus
comprising:

first receiving means for receiving a base coded moving picture sequence
signal, said base coded moving picture sequence signal being any one of said first coded
30 moving picture sequence signal, said second coded moving picture sequence signal, and
said differential coded moving picture sequence signal;

merging storage means for storing said base coded moving picture sequence
signal received by said first receiving means;

request signal determining means for determining a request signal for a
35 requested coded moving picture sequence signal on the basis of said base coded moving
picture sequence signal stored by said merging storage means;

request signal transmission means for transmitting said request signal for said requested coded moving picture sequence signal determined by said request signal determining means;

5 second receiving means for receiving said requested coded moving picture sequence signal;

merging coded signal extracting means for extracting said base coded moving picture sequence signal from said merging storage means;

merging means for merging said base coded moving picture sequence signal extracted by said merging coded signal extracting means with said requested coded moving picture sequence signal received by said second receiving means to reconstruct said first coded moving picture sequence signal on the basis of said second coefficient information obtained from said series of second picture information of said second coded moving picture sequence signal, and said differential coefficient information obtained from said differential coded signal; and

15 outputting means for inputting said reconstructed first coded moving picture sequence signal from said merging means to be outputted therethrough.

18. A coded signal merging apparatus as set forth in claim 17, in which

20 said first receiving means is operative to receive said second coded moving picture sequence signal,

said merging storage means is operative to store said second coded moving picture sequence signal received by said first receiving means,

25 said request signal determining means is operative to determine a request signal for a requested differential coded moving picture sequence signal on the basis of said second coded moving picture sequence signal stored by said merging storage means,

said request signal transmission means is operative to transmit a request signal for said requested differential coded moving picture sequence signal determined by said request signal determining means,

30 said second receiving means is operative to receive said requested differential coded moving picture sequence signal,

said merging coded signal extracting means is operative to extract said second coded moving picture sequence signal from said merging storage means, and

35 said merging means is operative to merge said second coded moving picture sequence signal extracted by said merging coded signal extracting means with said requested differential coded moving picture sequence signal received by said second receiving means to reconstruct said first coded moving picture sequence signal.

19. A coded signal merging apparatus as set forth in claim 18 further comprising second coded moving picture sequence signal decoding means for decoding said second coded moving picture sequence signal received by said first receiving means.

20. A coded signal merging apparatus as set forth in claim 18 or claim 19 further comprising editing means for cutting and combining component parts of said second coded moving picture sequence signal stored by said merging storage means to generate an edited second coded moving picture sequence signal in a desired size, in which

said request signal determining means is operative to determine a request signal for a requested differential coded moving picture sequence signal on the basis of said edited second coded moving picture sequence signal generated by said editing means,

said request signal transmission means is operative to transmit said request signal for said requested differential coded moving picture sequence signal determined by said request signal determining means, and

said merging means is operative to merge said edited second coded moving picture sequence signal generated by said editing means with said requested differential coded moving picture sequence signal received by said second receiving means to reconstruct said first coded moving picture sequence signal in said desired size.

21. A coded signal merging apparatus as set forth in claim 17, in which

said first receiving means is operative to receive said differential coded moving picture sequence signal,

said merging storage means is operative to store said differential coded moving picture sequence signal received by said first receiving means,

request signal determining means is operative to determine a request signal for a requested second coded moving picture sequence signal on the basis of said differential coded moving picture sequence signal stored by said merging storage means,

said request signal transmission means is operative to transmit said request signal for said requested second coded moving picture sequence signal determined by said request signal determining means,

said second receiving means is operative to receive said requested second coded moving picture sequence signal,

said merging coded signal extracting means is operative to extract said differential coded moving picture sequence signal stored by said merging storage means,

and

said merging means is operative to merge said differential coded moving picture sequence signal extracted by said merging coded signal extracting means with said second coded moving picture sequence signal received by said second receiving means to reconstruct said first coded moving picture sequence signal.

22. A coded signal merging apparatus as set forth in claim 21, in which said first receiving means is operative to receive said differential coded moving picture sequence signal by way of broadcasting.

23. A coded signal merging apparatus as set forth in any one of claim 18, claim 19, and claim 22, further comprising reconstructed first coded signal storage means for storing said reconstructed first coded moving picture sequence signal reconstructed by said merging means.

24. A coded signal merging apparatus as set forth in claim 17 further comprising: decoding means for decoding said first coded moving picture sequence signal or said second coded moving picture sequence signal; and merging coded signal converting means for inputting said first coded moving picture sequence signal to generate said second coded moving picture sequence signal, in which

said first receiving means is operative to receive said first coded moving picture sequence signal,

said decoding means is operative to decode said first coded moving picture sequence signal received by said first receiving means,

said merging coded signal converting means is operative to input said first coded moving picture sequence signal received by said first receiving means to generate said second coded moving picture sequence signal,

said merging storage means is operative to store said second coded moving picture sequence signal generated by said merging coded signal converting means,

said request signal determining means is operative to determine a request signal for a requested differential coded moving picture sequence signal on the basis of said second coded moving picture sequence signal stored by said merging storage means,

said request signal transmission means is operative to transmit said request signal for said requested differential coded moving picture sequence signal determined by said request signal determining means,

said second receiving means is operative to receive said requested differential coded moving picture sequence signal,

said merging coded signal extracting means is operative to extract said second coded moving picture sequence signal from said merging storage means, and

5 said merging means is operative to merge said second coded moving picture sequence signal extracted by said merging coded signal extracting means with said requested differential coded moving picture sequence signal received by said second receiving means to reconstruct said first coded moving picture sequence signal in said desired size.

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25. A coded signal merging apparatus as set forth in claim 17 further comprising:
 decoding means for decoding said first coded moving picture sequence signal or said second coded moving picture sequence signal; and

15 merging differential coded signal generating means for inputting said first coded moving picture sequence signal to generate said differential coded moving picture sequence signal,

 said first receiving means is operative to receive said first coded moving picture sequence signal,

20 said decoding means is operative to decode said first coded moving picture sequence signal received by said first receiving means,

 said merging differential coded signal generating means is operative to input said first coded moving picture sequence signal received by said first receiving means to generate said differential coded moving picture sequence signal,

25 said merging storage means is operative to store said differential coded moving picture sequence signal generated by said merging coded signal converting means,

 said request signal determining means is operative to determine a request signal for a requested second coded moving picture sequence signal on the basis of said differential coded moving picture sequence signal stored by said merging storage means,

30 said request signal transmission means is operative to transmit said request signal for said requested second coded moving picture sequence signal determined by said request signal determining means,

 said second receiving means is operative to receive said requested second coded moving picture sequence signal,

35 said merging coded signal extracting means is operative to extract said differential coded moving picture sequence signal from said merging storage means,

and

said merging means is operative to merge said differential coded moving picture sequence signal extracted by said merging coded signal extracting means with said requested second coded moving picture sequence signal received by said second receiving means to reconstruct said first coded moving picture sequence signal in said desired size.

26. A multi-output coded signal separating apparatus for inputting a first coded moving picture sequence signal to separate into a plurality of second coded moving picture sequence signals and a plurality of differential coded moving picture sequence signals comprising:

a plurality of coded signal separating units including a 1st coded signal separating unit up to a m -th coded signal separating unit wherein m is an integer not less than two;

said 1st coded signal separating unit being operative to input said first coded moving picture sequence signal to separate into a 1st second coded moving picture sequence signal and a 1st differential coded moving picture sequence signal, said 1st differential coded moving picture sequence signal being a difference between said first coded moving picture sequence signal and said 1st second coded moving picture sequence signal, and

said i -th coded signal separating unit being operative to input an $(i-1)$ -th second coded moving picture sequence signal to separate into an i -th second coded moving picture sequence signal and an i -th differential coded moving picture sequence signal, said i -th differential coded moving picture sequence signal being a difference between said $(i-1)$ -th second coded moving picture sequence signal and said i -th second coded moving picture sequence signal wherein i is an integer equal to or less than m ,

whereby said 1st coded signal separating unit includes:

1st inputting means for inputting said first coded moving picture sequence signal therethrough, said first coded moving picture sequence signal generated as a result of encoding original moving picture sequence signal and consisting of a series of first picture information having first coefficient information, said first coefficient information including a matrix of first coefficients;

1st coded signal converting means for converting said first coded moving picture sequence signal inputted through said 1st inputting means to generate a 1st second coded moving picture sequence signal, said 1st second coded moving picture sequence signal consisting of a series of 1st second picture information having 1st

second coefficient information, said 1st second coefficient information including a matrix of 1st second coefficients, each of said first coded moving picture sequence signal, and said 1st second coded moving picture sequence signal is in the form of a hierarchical structure including one or more sequence layers each having a plurality of screens sharing common information, one or more picture layers each having a plurality of slices sharing common information with respect to one of said screens, one or more slice layers each having a plurality of macroblocks with respect to one of said slices, one or more macroblock layers each having a plurality of blocks with respect to one of said macroblocks, and one or more block layers each having block information with respect to one of said blocks;

1st differential coded signal generating means for inputting said first coded moving picture sequence signal and said 1st second coded moving picture sequence signal from said 1st coded signal converting means to generate a 1st differential coded moving picture sequence signal on the basis of said first coefficient information obtained from said series of first picture information of said first coded moving picture sequence signal, and said 1st second coefficient information obtained from said series of said 1st second picture information of said 1st second coded moving picture sequence signal, said 1st differential coded moving picture sequence signal being a difference between said first coded moving picture sequence signal and said 1st second coded moving picture sequence signal;

1st separating storage means for selectively storing said first coded moving picture sequence signal, said 1st second coded moving picture sequence signal, and said 1st differential coded moving picture sequence signal;

1st first transmission means for selectively transmitting said first coded moving picture sequence signal, said 1st second coded moving picture sequence signal, and said 1st differential coded moving picture sequence signal;

1st request signal receiving means for receiving a request signal indicative of a requested coded moving picture sequence signal to be transmitted, said request signal indicative of said requested coded moving picture sequence signal being determined on the basis of said first coded moving picture sequence signal, said 1st second coded moving picture sequence signal, or said 1st differential coded moving picture sequence signal;

1st separating coded signal extracting means for extracting said requested coded moving picture sequence signal from said 1st separating storage means in response to said request signal; and

1st second transmission means for transmitting said requested coded moving

picture sequence signal extracted by said 1st separating coded signal extracting means,
and

said i-th coded signal separating unit includes:

5 i-th inputting means for inputting said (i-1)-th second coded moving picture
sequence signal therethrough from said (i-1)-th coded signal separating unit, said
(i-1)-th second coded moving picture sequence signal generated as a result of encoding
original moving picture sequence signal and consisting of a series of (i-1)-th second
picture information having (i-1)-th second coefficient information, said (i-1)-th second
coefficient information including a matrix of (i-1)-th second coefficients;

10 i-th coded signal converting means for converting said (i-1)-th second coded
moving picture sequence signal inputted through said i-th inputting means to generate
said i-th second coded moving picture sequence signal, said i-th second coded moving
picture sequence signal consisting of a series of i-th second picture information having
i-th second coefficient information, said i-th second coefficient information including a
15 matrix of i-th second coefficients, each of said (i-1)-th second coded moving picture
sequence signal, and said i-th second coded moving picture sequence signal is in the
form of a hierarchical structure including one or more sequence layers each having a
plurality of screens sharing common information, one or more picture layers each
having a plurality of slices sharing common information with respect to one of said
20 screens, one or more slice layers each having a plurality of macroblocks with respect to
one of said slices, one or more macroblock layers each having a plurality of blocks with
respect to one of said macroblocks, and one or more block layers each having block
information with respect to one of said blocks;

25 i-th differential coded signal generating means for inputting said (i-1)-th second
coded moving picture sequence signal and said i-th second coded moving picture
sequence signal from said i-th coded signal converting means to generate an i-th
differential coded moving picture sequence signal on the basis of said (i-1)-th second
coefficient information obtained from said series of (i-1)-th second picture information
of said (i-1)-th second coded moving picture sequence signal, and said i-th second
30 coefficient information obtained from said series of said i-th second picture information
of said i-th second coded moving picture sequence signal, said i-th differential coded
moving picture sequence signal being a difference between said (i-1)-th second coded
moving picture sequence signal and said i-th second coded moving picture sequence
signal;

35 i-th separating storage means for selectively storing said (i-1)-th second coded
moving picture sequence signal, said i-th second coded moving picture sequence signal,

and said i -th differential coded moving picture sequence signal;

i -th first transmission means for selectively transmitting said $(i-1)$ -th second coded moving picture sequence signal, said i -th second coded moving picture sequence signal, and said i -th differential coded moving picture sequence signal;

5 i -th request signal receiving means for receiving a request signal indicative of a requested coded moving picture sequence signal to be transmitted, said request signal indicative of said requested coded moving picture sequence signal being determined on the basis of said $(i-1)$ -th second coded moving picture sequence signal, said i -th second coded moving picture sequence signal, or said i -th differential coded moving picture
10 sequence signal;

i -th separating coded signal extracting means for extracting said requested coded moving picture sequence signal from said i -th separating storage means in response to said request signal; and

15 i -th second transmission means for transmitting said requested coded moving picture sequence signal extracted by said i -th separating coded signal extracting means.

27. A multi-input coded signal merging apparatus for inputting a plurality of second coded moving picture sequence signals and a plurality of differential coded moving picture sequence signals to reconstruct a first coded moving picture sequence
20 signal comprising:

a plurality of said coded signal merging units including a 1st coded signal merging unit up to a m -th coded signal merging unit wherein n is an integer not less than two,

said i -th coded signal merging unit being operative to input a i -th second coded
25 moving picture sequence signal and a i -th differential coded moving picture sequence signal to reconstruct an $(i-1)$ -th second coded moving picture sequence signal wherein i is an integer equal to or less than n , said i -th second coded moving picture sequence signal generated as a result of transcoding said $(i-1)$ -th second coded moving picture sequence signal and consisting of a series of i -th second picture information having i -th
30 second coefficient information, said i -th second coefficient information including a matrix of i -th second coefficients, said $(i-1)$ -th second coded moving picture sequence signal generated as a result of encoding original moving picture sequence signal and consisting of a series of $(i-1)$ -th second picture information having $(i-1)$ -th second coefficient information, said $(i-1)$ -th second coefficient information including a matrix
35 of $(i-1)$ -th second coefficients, said i -th differential coded moving picture sequence signal being a difference between said i -th second coded moving picture sequence

signal and said (i-1)-th second coded moving picture sequence signal, said i-th differential coded moving picture sequence signal including i-th differential coefficient information between said i-th second coefficient information and said (i-1)-th second coefficient information, each of said i-th second coded moving picture sequence signal, said (i-1)-th second coded moving picture sequence signal, and said i-th differential coded moving picture sequence signal is in the form of a hierarchical structure including one or more sequence layers each having a plurality of screens sharing common information, one or more picture layers each having a plurality of slices sharing common information with respect to one of said screens, one or more slice layers each having a plurality of macroblocks with respect to one of said slices, one or more macroblock layers each having a plurality of blocks with respect to one of said macroblocks, and one or more block layers each having block information with respect to one of said blocks, and

said 1st coded signal merging unit being operative to input said 1st second coded moving picture sequence signal and said 1st differential coded moving picture sequence signal to reconstruct said first coded moving picture sequence signal, whereby

said i-th coded signal merging unit includes:

i-th first receiving means for receiving a base coded moving picture sequence signal, said base coded moving picture sequence signal being any one of said i-th second coded moving picture sequence signal, said (i-1)-th second coded moving picture sequence signal, and said i-th differential coded moving picture sequence signal;

i-th merging storage means for storing said base coded moving picture sequence signal received by said i-th first receiving means;

i-th request signal determining means for determining a request signal for a requested coded moving picture sequence signal on the basis of said base coded moving picture sequence signal stored by said i-th merging storage means;

i-th request signal transmission means for transmitting said request signal for said requested coded moving picture sequence signal determined by said i-th request signal determining means;

i-th second receiving means for receiving said requested coded moving picture sequence signal;

i-th merging coded signal extracting means for extracting said base coded moving picture sequence signal from said i-th merging storage means;

i-th merging means for merging said base coded moving picture sequence signal extracted by said i-th merging coded signal extracting means with said requested coded moving picture sequence signal received by said i-th second receiving means to

reconstruct said (i-1)-th second coded moving picture sequence signal on the basis of i-th said second coefficient information obtained from said series of i-th second picture information of said i-th second coded moving picture sequence signal, and said i-th differential coefficient information obtained from said i-th differential coded signal; and

5 i-th outputting means for inputting said reconstructed i-th second coded moving picture sequence signal from said i-th merging means to be outputted therethrough,

said 1st coded signal merging unit includes:

10 1st first receiving means for receiving a base coded moving picture sequence signal, said base coded moving picture sequence signal being any one of said first coded moving picture sequence signal, said 1st second coded moving picture sequence signal, and said 1st differential coded moving picture sequence signal;

1st merging storage means for storing said base coded moving picture sequence signal received by said 1st first receiving means;

15 1st request signal determining means for determining a request signal for a requested coded moving picture sequence signal on the basis of said base coded moving picture sequence signal stored by said 1st merging storage means;

20 1st request signal transmission means for transmitting said request signal for said requested coded moving picture sequence signal determined by said 1st request signal determining means;

1st second receiving means for receiving said requested coded moving picture sequence signal;

1st merging coded signal extracting means for extracting said base coded moving picture sequence signal from said 1st merging storage means;

25 1st merging means for merging said base coded moving picture sequence signal extracted by said 1st merging coded signal extracting means with said requested coded moving picture sequence signal received by said 1st second receiving means to reconstruct said first coded moving picture sequence signal on the basis of said 1st second coefficient information obtained from said series of second picture information of said 1st second coded moving picture sequence signal, and said 1st differential coefficient information obtained from said 1st differential coded signal; and

1st outputting means for inputting said reconstructed first coded moving picture sequence signal from said 1st merging means to be outputted therethrough.

35 28. A multi-output coded signal separating apparatus as set forth in claim 26, in said i-th coded signal separating units

said i-th separating storage means is operative to store said (i-1)-th differential coded moving picture sequence signal generated by said i-th differential coded signal generating means,

5 said i-th first transmission means is operative to transmit said (i-1)-th second coded moving picture sequence signal generated by said i-th coded signal converting means,

10 said i-th request signal receiving means is operative to receive said request signal indicative of a requested (i-1)-th differential coded moving picture sequence signal to be transmitted, said request signal indicative of said requested (i-1)-th differential coded moving picture sequence signal being determined on the basis of said (i-1)-th second coded moving picture sequence signal,

said i-th separating coded signal extracting means is operative to extract said requested (i-1)-th differential coded moving picture sequence signal from said i-th separating storage means in response to said request signal, and

15 said i-th second transmission means is operative to transmit said requested (i-1)-th differential coded moving picture sequence signal extracted by said i-th separating coded signal extracting means whereby

20 said multi-output coded signal separating apparatus is operative to input a first coded moving picture sequence signal to separate into a plurality of second coded moving picture sequence signals and a plurality of differential coded moving picture sequence signals.

29. A multi-input coded signal merging apparatus as set forth in claim 27, in said i-th coded signal merging unit,

25 said i-th first receiving means is operative to receive said i-th second coded moving picture sequence signal,

said i-th merging storage means is operative to store said i-th second coded moving picture sequence signal received by said i-th first receiving means,

30 said i-th request signal determining means is operative to determine a request signal for a requested differential coded moving picture sequence signal on the basis of said i-th second coded moving picture sequence signal stored by said i-th merging storage means,

35 said i-th request signal transmission means is operative to transmit said request signal for said requested differential coded moving picture sequence signal determined by said i-th request signal determining means,

said i-th second receiving means is operative to receive said requested

differential coded moving picture sequence signal,

said i -th merging coded signal extracting means is operative to extract said i -th second coded moving picture sequence signal from said i -th merging storage means, and

5 said i -th merging means is operative to merge said i -th second coded moving picture sequence signal extracted by said i -th merging coded signal extracting means with said requested differential coded moving picture sequence signal received by said i -th second receiving means to reconstruct said $(i-1)$ -th second coded moving picture sequence signal wherein said 0-th second coded moving picture sequence signal is said
10 first coded moving picture sequence signal.

30. A coded signal separating and merging system comprising:

15 a multi-output coded signal separating apparatus for inputting a first coded moving picture sequence signal to separate into a plurality of second coded moving picture sequence signals and a plurality of differential coded moving picture sequence signals; and

20 a multi-input coded signal merging apparatus for inputting a plurality of second coded moving picture sequence signals and a plurality of differential coded moving picture sequence signals to reconstruct said first coded moving picture sequence signal,

25 said multi-output coded signal separating apparatus including:

30 a plurality of coded signal separating units including a 1st coded signal separating unit up to a m -th coded signal separating unit wherein m is an integer not less than two;

35 said multi-input coded signal merging apparatus including:

40 a plurality of coded signal merging units including a 1st coded signal merging unit up to a n -th coded signal merging unit wherein n is an integer not less than two and equal to or less than said m ,

45 said i -th coded signal separating unit including:

50 i -th inputting means for inputting an $(i-1)$ -th second coded moving picture sequence signal therethrough from said $(i-1)$ -th coded signal separating unit, said $(i-1)$ -th second coded moving picture sequence signal generated as a result of encoding original moving picture sequence signal and consisting of a series of $(i-1)$ -th second picture information having $(i-1)$ -th second coefficient information, said $(i-1)$ -th second coefficient information including a matrix of $(i-1)$ -th second coefficients wherein i is an
55 integer equal to or less than m , and 0-th second coded moving picture sequence signal is said first coded moving picture sequence signal;

i-th coded signal converting means for converting said (i-1)-th second coded moving picture sequence signal inputted through said i-th inputting means to generate an i-th second coded moving picture sequence signal, said i-th second coded moving picture sequence signal consisting of a series of i-th second picture information having i-th second coefficient information, said i-th second coefficient information including a matrix of second coefficients, each of said (i-1)-th second coded moving picture sequence signal, and said i-th second coded moving picture sequence signal is in the form of a hierarchical structure including one or more sequence layers each having a plurality of screens sharing common information, one or more picture layers each having a plurality of slices sharing common information with respect to one of said screens, one or more slice layers each having a plurality of macroblocks with respect to one of said slices, one or more macroblock layers each having a plurality of blocks with respect to one of said macroblocks, and one or more block layers each having block information with respect to one of said blocks;

i-th differential coded signal generating means for inputting said (i-1)-th second coded moving picture sequence signal and said i-th second coded moving picture sequence signal from said i-th coded signal converting means to generate an i-th differential coded moving picture sequence signal on the basis of said (i-1)-th second coefficient information obtained from said series of (i-1)-th second picture information of said (i-1)-th second coded moving picture sequence signal, and said i-th second coefficient information obtained from said series of said i-th second picture information of said i-th second coded moving picture sequence signal, said i-th differential coded moving picture sequence signal being a difference between said (i-1)-th second coded moving picture sequence signal and said i-th second coded moving picture sequence signal;

i-th separating storage means for selectively storing said (i-1)-th second coded moving picture sequence signal, said i-th second coded moving picture sequence signal, and said i-th differential coded moving picture sequence signal; and

i-th first transmission means for selectively transmitting said (i-1)-th second coded moving picture sequence signal, said i-th second coded moving picture sequence signal, and said i-th differential coded moving picture sequence signal to said i-th coded signal merging unit;

said i-th coded signal merging unit including:

i-th first receiving means for receiving a base coded moving picture sequence signal from said i-th coded signal separating unit or said (i+1)-th coded signal merging unit ($6200i+1$), said base coded moving picture sequence signal being any one of said

(i-1)-th second coded moving picture sequence signal, said i-th second coded moving picture sequence signal, and said i-th differential coded moving picture sequence signal;

i-th merging storage means for storing said base coded moving picture sequence signal received by said i-th first receiving means;

5 i-th request signal determining means for determining a request signal for a requested coded moving picture sequence signal on the basis of said base coded moving picture sequence signal stored by said i-th merging storage means; and

i-th request signal transmission means for transmitting said request signal for said requested coded moving picture sequence signal determined by said i-th request
10 signal determining means to said i-th coded signal separating unit;

whereby said i-th coded signal separating unit further includes:

i-th request signal receiving means for receiving said request signal transmitted by said i-th request signal transmission means from said i-th coded signal merging unit;

i-th separating coded signal extracting means for extracting said requested
15 coded moving picture sequence signal from said i-th separating storage means in response to said request signal; and

i-th second transmission means for transmitting said requested coded moving picture sequence signal extracted by said i-th separating coded signal extracting means to said i-th coded signal merging unit;

20 said i-th coded signal merging unit includes:

i-th second receiving means for receiving said requested coded moving picture sequence signal transmitted by said i-th second transmission means from said i-th coded signal separating unit;

i-th merging coded signal extracting means for extracting said base coded
25 moving picture sequence signal from said i-th merging storage means;

i-th merging means for merging said base coded moving picture sequence signal extracted by said i-th merging coded signal extracting means with said requested coded moving picture sequence signal received by said i-th second receiving means on the basis of said i-th second coefficient information obtained from said series of second
30 picture information of said i-th second coded moving picture sequence signal, and said i-th differential coefficient information obtained from said i-th differential coded signal to reconstruct said (i-1)-th second coded moving picture sequence signal; and

i-th outputting means for inputting said reconstructed (i-1)-th second coded moving picture sequence signal from said i-th merging means to be outputted
35 therethrough.

31. A coded signal separating and merging system as set forth in claim 30 in which said i-th separating storage means of said i-th coded signal separating unit is operative to store said i-th differential coded moving picture sequence signal generated by said i-th differential coded signal generating means,

5 said i-th first transmission means is operative to transmit said i-th second coded moving picture sequence signal generated by said i-th coded signal converting means,

said i-th first receiving means of said i-th coded signal merging unit is operative to receive said i-th second coded moving picture sequence signal from said (i+1)-th coded signal merging unit,

10 said i-th merging storage means is operative to store said i-th second coded moving picture sequence signal received by said i-th first receiving means,

said i-th request signal determining means is operative to determine a request signal for a requested differential coded moving picture sequence signal on the basis of said i-th second coded moving picture sequence signal stored by said i-th merging storage means,

15 said i-th request signal transmission means is operative to transmit said request signal for said requested differential coded moving picture sequence signal determined by said i-th request signal determining means,

20 said i-th request signal receiving means of said i-th coded signal separating unit is operative to receive said request signal transmitted by said i-th request signal transmission means,

said i-th separating coded signal extracting means is operative to extract said requested differential coded moving picture sequence signal from said i-th separating storage means in response to said request signal,

25 said i-th second transmission means is operative to transmit said requested differential coded moving picture sequence signal extracted by said i-th separating coded signal extracting means to said i-th coded signal merging unit,

30 said i-th second receiving means of said i-th coded signal merging unit is operative to receive said requested differential coded moving picture sequence signal transmitted by said i-th second transmission means from said i-th coded signal separating unit,

said i-th merging coded signal extracting means is operative to extract said i-th second coded moving picture sequence signal from said i-th merging storage means, and

35 said i-th merging means is operative to merge said i-th second coded moving picture sequence signal extracted by said i-th merging coded signal extracting means

with said requested differential coded moving picture sequence signal received by said i-th second receiving means to reconstruct said first coded moving picture sequence signal.

- 5 32. A coded signal separating and merging method comprising the steps of:
- (a) inputting a first coded moving picture sequence signal to separate into a second coded moving picture sequence signal and a differential coded moving picture sequence signal; and
- 10 (b) inputting said second coded moving picture sequence signal and said differential coded moving picture sequence signal to reconstruct said first coded moving picture sequence signal,
- said step (a) including the steps of:
- (a-1) inputting said first coded moving picture sequence signal therethrough, said first coded moving picture sequence signal generated as a result of encoding original
- 15 moving picture sequence signal and consisting of a series of first picture information having first coefficient information, said first coefficient information including a matrix of first coefficients;
- (a-2) converting said first coded moving picture sequence signal inputted in said step (a-1) to generate said second coded moving picture sequence signal, said second coded
- 20 moving picture sequence signal consisting of a series of second picture information having second coefficient information, said second coefficient information including a matrix of second coefficients, each of said first coded moving picture sequence signal, and said second coded moving picture sequence signal is in the form of a hierarchical structure including one or more sequence layers each having a plurality of screens
- 25 sharing common information, one or more picture layers each having a plurality of slices sharing common information with respect to one of said screens, one or more slice layers each having a plurality of macroblocks with respect to one of said slices, one or more macroblock layers each having a plurality of blocks with respect to one of said macroblocks, and one or more block layers each having block information with
- 30 respect to one of said blocks;
- (a-3) inputting said first coded moving picture sequence signal and said second coded moving picture sequence signal to generate a differential coded moving picture sequence signal on the basis of said first coefficient information obtained from said series of first picture information of said first coded moving picture sequence signal,
- 35 and said second coefficient information obtained from said series of said second picture information of said second coded moving picture sequence signal, said differential

coded moving picture sequence signal being a difference between said first coded moving picture sequence signal and said second coded moving picture sequence signal;

(a-4) selectively storing said first coded moving picture sequence signal, said second coded moving picture sequence signal, and said differential coded moving picture sequence signal; and

(a-5) selectively transmitting said first coded moving picture sequence signal, said second coded moving picture sequence signal, and said differential coded moving picture sequence signal to said step (b);

said step (b) including the steps of:

(b-1) receiving a base coded moving picture sequence signal transmitted in said step (a-5), said base coded moving picture sequence signal being any one of said first coded moving picture sequence signal, said second coded moving picture sequence signal, and said differential coded moving picture sequence signal;

(b-2) storing said base coded moving picture sequence signal received in said step

(b-1);

(b-3) determining a request signal for a requested coded moving picture sequence signal on the basis of said base coded moving picture sequence signal stored in said step (b-2); and

(b-4) transmitting said request signal for said requested coded moving picture sequence signal determined in said step (b-3) to said step (a);

whereby said step (a) further includes the steps of:

(a-6) receiving said request signal transmitted in said step (b-4);

(a-7) extracting said requested coded moving picture sequence signal in response to said request signal; and

(a-8) transmitting said requested coded moving picture sequence signal extracted in said step (a-7) to said step (b);

said step (b) includes the steps of:

(b-5) receiving said requested coded moving picture sequence signal transmitted in said step (a-8);

(b-6) extracting said base coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (b-2);

(b-7) merging said base coded moving picture sequence signal extracted in said step (b-6) with said requested coded moving picture sequence signal received in said step (b-5) on the basis of said second coefficient information obtained from said series of

second picture information of said second coded moving picture sequence signal, and said differential coefficient information obtained from said differential coded signal to

reconstruct said first coded moving picture sequence signal; and

(b-8) inputting said reconstructed first coded moving picture sequence signal generated in said step (b-7) to be outputted therethrough.

5 33. A coded signal separating and merging method as set forth in claim 32, in which

said step (a-4) has the step of storing said differential coded moving picture sequence signal generated in said step (a-3),

10 said step (a-5) has the step of transmitting said second coded moving picture sequence signal generated in said step (a-2),

said step (b-1) has the step of receiving said second coded moving picture sequence signal transmitted in said step (a-5),

said step (b-2) has the step of storing said second coded moving picture sequence signal received in said step (b-1),

15 said step (b-3) has the step of determining a request signal for a requested differential coded moving picture sequence signal on the basis of said second coded moving picture sequence signal stored in said step (b-2),

said step (b-4) has the step of transmitting said request signal for said requested differential coded moving picture sequence signal determined in said step (b-3),

20 said step (a-6) has the step of receiving said request signal transmitted in said step (b-4),

said step (a-7) has the step of extracting said requested differential coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (a-4) in response to said request signal,

25 said step (a-8) has the step of transmitting said requested differential coded moving picture sequence signal extracted in said step (a-7) to said step (b),

said step (b-5) has the step of receiving said requested differential coded moving picture sequence signal transmitted in said step (a-8),

30 said step (b-6) has the step of extracting said second coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (b-2), and

35 said step (b-7) has the step of merging said second coded moving picture sequence signal extracted in said step (b-6) with said requested differential coded moving picture sequence signal received in said step (b-5) to reconstruct said first coded moving picture sequence signal.

34. A coded signal separating and merging method as set forth in claim 33, in which

said step (b) further includes the step of decoding said second coded moving picture sequence signal received in said step (b-1).

5

35. A coded signal separating and merging method as set forth in claim 33 or claim 34, in which

said step (b) further includes the step of (b-9) cutting and combining component parts of said second coded moving picture sequence signal stored in said step (b-2) to generate an edited second coded moving picture sequence signal in a desired size,

10

said step (b-3) has the step of determining a request signal for a requested differential coded moving picture sequence signal on the basis of said edited second coded moving picture sequence signal generated in said step (b-9),

15

said step (b-4) has the step of transmitting said request signal for said requested differential coded moving picture sequence signal determined in said step (b-3) to said step (a),

said step (a-7) has the step of extracting said requested differential coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (a-4) in response to said request signal, and

20

said step (b-7) has the step of merging said edited second coded moving picture sequence signal generated in said step (b-9) with said requested differential coded moving picture sequence signal received in said step (b-5) to reconstruct said first coded moving picture sequence signal in said desired size.

25

36. A coded signal separating and merging method as set forth in claim 32, in which

said step (a-4) has the step of storing said second coded moving picture sequence signal generated in said step (a-2),

30

said step (a-5) has the step of transmitting said differential coded moving picture sequence signal generated in said step (a-3) to said step (b),

said step (b-1) has the step of receiving said differential coded moving picture sequence signal transmitted in said step (a-5),

said step (b-2) has the step of storing said differential coded moving picture sequence signal received in said step (b-1),

35

step (b-3) has the step of determining a request signal for a requested second

coded moving picture sequence signal on the basis of said differential coded moving picture sequence signal stored in said step (b-2),

said step (b-4) has the step of transmitting said request signal for said requested second coded moving picture sequence signal determined in said step (b-3),

5 said step (a-6) has the step of receiving said request signal transmitted in said step (b-4),

said step (a-7) has the step of extracting said requested second coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (a-4) in response to said request signal,

10 said step (a-8) has the step of transmitting said requested second coded moving picture sequence signal extracted in said step (a-7) to said step (b),

said step (b-5) has the step of receiving said requested second coded moving picture sequence signal transmitted in said step (a-8),

15 said step (b-6) has the step of extracting said differential coded moving picture sequence signal stored in said step (b-2), and

said step (b-7) has the step of merging said differential coded moving picture sequence signal extracted in said step (b-6) with said second coded moving picture sequence signal received in said step (b-5) to reconstruct said first coded moving picture sequence signal.

20

37. A coded signal separating and merging method as set forth in claim 36, in which

said step (a-5) has the step of transmitting said differential coded moving picture sequence signal by way of broadcasting.

25

38. A coded signal separating and merging method as set forth in any one of claim 33, claim 34 and claim 37, in which

said step (b) further includes the step of storing said reconstructed first coded moving picture sequence signal reconstructed in said step (b-7).

30

39. A coded signal separating and merging method as set forth in claim 32, in which

said step (b) further includes the steps of:

(b-10) decoding said first coded moving picture sequence signal or said second coded moving picture sequence signal; and

35

(b-11) inputting said first coded moving picture sequence signal to generate said

second coded moving picture sequence signal,

said step (a-5) has the step of transmitting said first coded moving picture sequence signal,

5 said step (a-4) has the step of storing said differential coded moving picture sequence signal generated in said step (a-3),

said step (b-1) has the step of receiving said first coded moving picture sequence signal transmitted in said step (a-5),

said step (b-10) has the step of decoding said first coded moving picture sequence signal received in said step (b-1),

10 said step (b-11) has the step of inputting said first coded moving picture sequence signal received in said step (b-1) to generate said second coded moving picture sequence signal,

said step (b-2) has the step of storing said second coded moving picture sequence signal generated in said step (b-11),

15 said step (b-3) has the step of determining a request signal for a requested differential coded moving picture sequence signal on the basis of said second coded moving picture sequence signal stored in said step (b-2),

20 said step (b-4) has the step of transmitting said request signal for said requested differential coded moving picture sequence signal determined in said step (b-3) to said step (a),

said step (a-6) has the step of receiving said request signal transmitted in said step (b-4),

25 said step (a-7) has the step of extracting said requested differential coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (a-4) in response to said request signal,

said step (a-8) has the step of transmitting said requested differential coded moving picture sequence signal extracted in said step (a-7) to said step (b),

said step (b-5) has the step of receiving said requested differential coded moving picture sequence signal transmitted in said step (a-8),

30 said step (b-6) has the step of extracting said second coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (b-2), and

35 said step (b-7) has the step of merging said second coded moving picture sequence signal extracted in said step (b-6) with said requested differential coded moving picture sequence signal received in said step (b-5) to reconstruct said first coded moving picture sequence signal in said desired size.

40. A coded signal separating and merging method as set forth in claim 32, in which

said step (b) further includes the steps of:

5 (b-10) decoding said first coded moving picture sequence signal or said second coded moving picture sequence signal; and

(b-12) inputting said first coded moving picture sequence signal to generate said differential coded moving picture sequence signal,

10 said step (a-5) has the step of transmitting said first coded moving picture sequence signal,

said step (a-4) has the step of storing said second coded moving picture sequence signal generated in said step (a-2),

said step (b-1) has the step of receiving said first coded moving picture sequence signal transmitted in said step (a-5),

15 said step (b-10) has the step of decoding said first coded moving picture sequence signal received in said step (b-1),

said step (b-12) has the step of inputting said first coded moving picture sequence signal received in said step (b-1) to generate said differential coded moving picture sequence signal,

20 said step (b-2) has the step of storing said differential coded moving picture sequence signal generated in said step (b-11),

said step (b-3) has the step of determining a request signal for a requested second coded moving picture sequence signal on the basis of said differential coded moving picture sequence signal stored in said step (b-2),

25 said step (b-4) has the step of transmitting said request signal for said requested second coded moving picture sequence signal determined in said step (b-3) to said step (a),

said step (a-6) has the step of receiving said request signal transmitted in said step (b-4),

30 said step (a-7) has the step of extracting said requested second coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (a-4) in response to said request signal,

said step (a-8) has the step of transmitting said requested second coded moving picture sequence signal extracted in said step (a-7) to said step (b),

35 said step (b-5) has the step of receiving said requested second coded moving picture sequence signal transmitted in said step (a-8),

said step (b-6) has the step of extracting said differential coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (b-2), and

5 said step (b-7) has the step of merging said differential coded moving picture sequence signal extracted in said step (b-6) with said requested second coded moving picture sequence signal received in said step (b-5) to reconstruct said first coded moving picture sequence signal in said desired size.

41. A coded signal separating method for inputting a first coded moving picture sequence signal to separate into a second coded moving picture sequence signal and a differential coded moving picture sequence signal comprising the steps of:

10 (a-1) inputting said first coded moving picture sequence signal therethrough, said first coded moving picture sequence signal generated as a result of encoding original moving picture sequence signal and consisting of a series of first picture information
15 having first coefficient information, said first coefficient information including a matrix of first coefficients;

20 (a-2) converting said first coded moving picture sequence signal inputted in said step (a-1) to generate said second coded moving picture sequence signal, said second coded moving picture sequence signal consisting of a series of second picture information
25 having second coefficient information, said second coefficient information including a matrix of second coefficients, each of said first coded moving picture sequence signal, and said second coded moving picture sequence signal is in the form of a hierarchical structure including one or more sequence layers each having a plurality of screens sharing common information, one or more picture layers each having a plurality of
30 slices sharing common information with respect to one of said screens, one or more slice layers each having a plurality of macroblocks with respect to one of said slices, one or more macroblock layers each having a plurality of blocks with respect to one of said macroblocks, and one or more block layers each having block information with respect to one of said blocks;

35 (a-3) inputting said first coded moving picture sequence signal and said second coded moving picture sequence signal from said step (a-2) to generate a differential coded moving picture sequence signal on the basis of said first coefficient information obtained from said series of first picture information of said first coded moving picture sequence signal, and said second coefficient information obtained from said series of
said second picture information of said second coded moving picture sequence signal, said differential coded moving picture sequence signal being a difference between said

first coded moving picture sequence signal and said second coded moving picture sequence signal;

(a-4) selectively storing said first coded moving picture sequence signal, said second coded moving picture sequence signal, and said differential coded moving picture sequence signal;

(a-5) selectively transmitting said first coded moving picture sequence signal, said second coded moving picture sequence signal, and said differential coded moving picture sequence signal;

(a-6) receiving a request signal indicative of a requested coded moving picture sequence signal to be transmitted, said request signal indicative of said requested coded moving picture sequence signal being determined on the basis of said first coded moving picture sequence signal, said second coded moving picture sequence signal, or said differential coded moving picture sequence signal;

(a-7) extracting said requested coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (a-4) in response to said request signal; and

(a-8) transmitting said requested coded moving picture sequence signal extracted in said step (a-7).

42. A coded signal separating method as set forth in claim 41, in which said step (a-4) has the step of storing said differential coded moving picture sequence signal generated in said step (a-3),

said step (a-5) has the step of transmitting said second coded moving picture sequence signal generated in said step (a-2),

said step (a-6) has the step of receiving said request signal indicative of a requested differential coded moving picture sequence signal to be transmitted, said request signal indicative of said requested differential coded moving picture sequence signal being determined on the basis of said second coded moving picture sequence signal,

said step (a-7) has the step of extracting said requested differential coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (a-4) in response to said request signal, and

said step (a-8) has the step of transmitting said requested differential coded moving picture sequence signal extracted in said step (a-7).

43. A coded signal separating method as set forth in claim 42, in which

said step (a-6) has the step of receiving said request signal indicative of said requested differential coded moving picture sequence signal to be transmitted, said request signal indicative of said requested differential coded moving picture sequence signal being determined on the basis of an edited second coded moving picture sequence signal generated by cutting and combining component parts of said second coded moving picture sequence signal,

said step (a-7) has the step of extracting said requested differential coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (a-4) in response to said request signal, and

said step (a-8) has the step of transmitting said requested differential coded moving picture sequence signal extracted in said step (a-7).

44. A coded signal separating method as set forth in claim 41, in which

said step (a-4) has the step of storing said second coded moving picture sequence signal generated in said step (a-2),

said step (a-5) has the step of transmitting said differential coded moving picture sequence signal generated in said step (a-3),

said step (a-6) has the step of receiving said request signal indicative of said requested second coded moving picture sequence signal to be transmitted, said request signal indicative of said requested second coded moving picture sequence signal being determined on the basis of said differential coded moving picture sequence signal,

said step (a-7) has the step of extracting said requested second coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (a-4) in response to said request signal, and

said step (a-8) has the step of transmitting said requested second coded moving picture sequence signal extracted in said step (a-7).

45. A coded signal separating method as set forth in claim 44, in which

said step (a-5) has the step of transmitting said differential coded moving picture sequence signal by way of broadcasting.

46. A coded signal separating method as set forth in claim 41, in which

said step (a-5) has the step of transmitting said first coded moving picture sequence signal,

said step (a-4) has the step of storing said differential coded moving picture sequence signal generated in said step (a-3),

said step (a-6) has the step of receiving said request signal indicative of a requested differential coded moving picture sequence signal to be transmitted, said request signal indicative of said requested differential coded moving picture sequence signal being determined on the basis of a second coded moving picture sequence signal generated in accordance with said first coded moving picture sequence signal,

said step (a-7) has the step of extracting said requested differential coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (a-4) in response to said request signal, and

said step (a-8) has the step of transmitting said requested differential coded moving picture sequence signal extracted in said step (a-7).

47. A coded signal separating method as set forth in claim 41, in which

said step (a-5) has the step of transmitting said first coded moving picture sequence signal,

said step (a-4) has the step of storing said second coded moving picture sequence signal generated in said step (a-2),

said step (a-6) has the step of receiving said request signal indicative of a requested second coded moving picture sequence signal to be transmitted, said request signal indicative of said requested second coded moving picture sequence signal being determined on the basis of a differential coded moving picture sequence signal generated in accordance with said first coded moving picture sequence signal,

said step (a-7) has the step of extracting said requested second coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (a-4) in response to said request signal, and

said step (a-8) has the step of transmitting said requested second coded moving picture sequence signal extracted in said step (a-7).

48. A coded signal merging method for inputting a second coded moving picture sequence signal and a differential coded moving picture sequence signal to reconstruct a first coded moving picture sequence signal, said second coded moving picture sequence signal generated as a result of transcoding said first coded moving picture sequence signal and consisting of a series of second picture information having second coefficient information, said second coefficient information including a matrix of second coefficients, said first coded moving picture sequence signal generated as a result of encoding original moving picture sequence signal and consisting of a series of first picture information having first coefficient information, said first coefficient

information including a matrix of first coefficients, said differential coded moving picture sequence signal being a difference between said first coded moving picture sequence signal and said second coded moving picture sequence signal, said differential coded moving picture sequence signal including differential coefficient information
5 between said first coefficient information and said second coefficient information, each of said first coded moving picture sequence signal, said second coded moving picture sequence signal, and said differential coded moving picture sequence signal is in the form of a hierarchical structure including one or more sequence layers each having a plurality of screens sharing common information, one or more picture layers each
10 having a plurality of slices sharing common information with respect to one of said screens, one or more slice layers each having a plurality of macroblocks with respect to one of said slices, one or more macroblock layers each having a plurality of blocks with respect to one of said macroblocks, and one or more block layers each having block information with respect to one of said blocks, said step (b) comprising the steps of:

15 (b-1) receiving a base coded moving picture sequence signal, said base coded moving picture sequence signal being any one of said first coded moving picture sequence signal, said second coded moving picture sequence signal, and said differential coded moving picture sequence signal;

(b-2) storing said base coded moving picture sequence signal received in said step

20 (b-1);

(b-3) determining a request signal for a requested coded moving picture sequence signal on the basis of said base coded moving picture sequence signal stored in said step (b-2);

(b-4) transmitting said request signal for said requested coded moving picture
25 sequence signal determined in said step (b-3);

(b-5) receiving said requested coded moving picture sequence signal;

(b-6) extracting said base coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (b-2);

(b-7) merging said base coded moving picture sequence signal extracted in said step

30 (b-6) with said requested coded moving picture sequence signal received in said step (b-5) to reconstruct said first coded moving picture sequence signal on the basis of said second coefficient information obtained from said series of second picture information of said second coded moving picture sequence signal, and said differential coefficient information obtained from said differential coded signal; and

35 (b-8) inputting said reconstructed first coded moving picture sequence signal generated in said step (b-7) to be outputted therethrough.

49. A coded signal merging method as set forth in claim 48, in which
said step (b-1) has the step of receiving said second coded moving picture
sequence signal,

5 said step (b-2) has the step of storing said second coded moving picture
sequence signal received in said step (b-1),

said step (b-3) has the step of determining a request signal for a requested
differential coded moving picture sequence signal on the basis of said second coded
moving picture sequence signal stored in said step (b-2),

10 said step (b-4) has the step of transmitting a request signal for said requested
differential coded moving picture sequence signal determined in said step (b-3),

said step (b-5) has the step of receiving said requested differential coded
moving picture sequence signal,

15 said step (b-6) has the step of extracting said second coded moving picture
sequence signal from among coded moving picture sequence signals stored in said step
(b-2), and

20 said step (b-7) has the step of merging said second coded moving picture
sequence signal extracted in said step (b-6) with said requested differential coded
moving picture sequence signal received in said step (b-5) to reconstruct said first coded
moving picture sequence signal.

50. A coded signal merging method as set forth in claim 49 further comprising the
step of decoding said second coded moving picture sequence signal received in said step
(b-1).

25 51. A coded signal merging method as set forth in claim 49 or claim 50 further
comprising the step of (b-9) cutting and combining component parts of said second
coded moving picture sequence signal stored in said step (b-2) to generate an edited
second coded moving picture sequence signal in a desired size, in which

30 said step (b-3) has the step of determining a request signal for a requested
differential coded moving picture sequence signal on the basis of said edited second
coded moving picture sequence signal generated in said step (b-9),

said step (b-4) has the step of transmitting said request signal for said requested
differential coded moving picture sequence signal determined in said step (b-3), and

35 said step (b-7) has the step of merging said edited second coded moving picture
sequence signal generated in said editing step (b-9) with said requested differential

coded moving picture sequence signal received in said step (b-5) to reconstruct said first coded moving picture sequence signal in said desired size.

52. A coded signal merging method as set forth in claim 48, in which

5 said step (b-1) has the step of receiving said differential coded moving picture sequence signal,

said step (b-2) has the step of storing said differential coded moving picture sequence signal received in said step (b-1),

10 step (b-3) has the step of determining a request signal for a requested second coded moving picture sequence signal on the basis of said differential coded moving picture sequence signal stored in said step (b-2),

said step (b-4) has the step of transmitting said request signal for said requested second coded moving picture sequence signal determined in said step (b-3),

15 said step (b-5) has the step of receiving said requested second coded moving picture sequence signal,

said step (b-6) has the step of extracting said differential coded moving picture sequence signal stored in said step (b-2), and

20 said step (b-7) has the step of merging said differential coded moving picture sequence signal extracted in said step (b-6) with said second coded moving picture sequence signal received in said step (b-5) to reconstruct said first coded moving picture sequence signal.

53. A coded signal merging method as set forth in claim 52, in which

25 said step (b-1) has the step of receiving said differential coded moving picture sequence signal by way of broadcasting.

54. A coded signal merging method as set forth in any one of claim 49, claim 50, and claim 53, further comprising the step of storing said reconstructed first coded moving picture sequence signal reconstructed in said step (b-7).

30 55. A coded signal merging method as set forth in claim 48 further comprising the steps of:

(b-10) decoding said first coded moving picture sequence signal or said second coded moving picture sequence signal; and

35 (b-11) inputting said first coded moving picture sequence signal to generate said second coded moving picture sequence signal, in which

said step (b-1) has the step of receiving said first coded moving picture sequence signal,

said step (b-10) has the step of decoding said first coded moving picture sequence signal received in said step (b-1),

5 said step (b-11) has the step of inputting said first coded moving picture sequence signal received in said step (b-1) to generate said second coded moving picture sequence signal,

said step (b-2) has the step of storing said second coded moving picture sequence signal generated in said step (b-11),

10 said step (b-3) has the step of determining a request signal for a requested differential coded moving picture sequence signal on the basis of said second coded moving picture sequence signal stored in said step (b-2),

said step (b-4) has the step of transmitting said request signal for said requested differential coded moving picture sequence signal determined in said step (b-3),

15 said step (b-5) has the step of receiving said requested differential coded moving picture sequence signal,

said step (b-6) has the step of extracting said second coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (b-2), and

20 said step (b-7) has the step of merging said second coded moving picture sequence signal extracted in said step (b-6) with said requested differential coded moving picture sequence signal received in said step (b-5) to reconstruct said first coded moving picture sequence signal in said desired size.

25 56. A coded signal merging method as set forth in claim 48 further comprising the steps of:

(b-10) decoding said first coded moving picture sequence signal or said second coded moving picture sequence signal; and

30 (b-12) inputting said first coded moving picture sequence signal to generate said differential coded moving picture sequence signal,

said step (b-1) has the step of receiving said first coded moving picture sequence signal,

said step (b-10) has the step of decoding said first coded moving picture sequence signal received in said step (b-1),

35 said step (b-12) has the step of inputting said first coded moving picture sequence signal received in said step (b-1) to generate said differential coded moving

picture sequence signal,

said step (b-2) has the step of storing said differential coded moving picture sequence signal generated in said step (b-11),

5 said step (b-3) has the step of determining a request signal for a requested second coded moving picture sequence signal on the basis of said differential coded moving picture sequence signal stored in said step (b-2),

said step (b-4) has the step of transmitting said request signal for said requested second coded moving picture sequence signal determined in said step (b-3),

10 said step (b-5) has the step of receiving said requested second coded moving picture sequence signal,

said step (b-6) has the step of extracting said differential coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (b-2), and

15 said step (b-7) has the step of merging said differential coded moving picture sequence signal extracted in said step (b-6) with said requested second coded moving picture sequence signal received in said step (b-5) to reconstruct said first coded moving picture sequence signal in said desired size.

20 57. A multi-output coded signal separating method for inputting a first coded moving picture sequence signal to separate into a plurality of second coded moving picture sequence signals and a plurality of differential coded moving picture sequence signals comprising a plurality of steps (A1 to A_m) including a step (A1) up to a step (A_m) wherein **m** is an integer not less than two;

25 said step (A1) is the step of inputting said first coded moving picture sequence signal to separate into a 1st second coded moving picture sequence signal and a 1st differential coded moving picture sequence signal, said 1st differential coded moving picture sequence signal being a difference between said first coded moving picture sequence signal and said 1st second coded moving picture sequence signal, and

30 said step (A_i) is the step of inputting an (i-1)-th second coded moving picture sequence signal to separate into an i-th second coded moving picture sequence signal and an i-th differential coded moving picture sequence signal, said i-th differential coded moving picture sequence signal being a difference between said (i-1)-th second coded moving picture sequence signal and said i-th second coded moving picture sequence signal wherein **i** is an integer equal to or less than **m**,

35 whereby said step (A1) includes the steps of:

(A1-1) inputting said first coded moving picture sequence signal therethrough, said

first coded moving picture sequence signal generated as a result of encoding original moving picture sequence signal and consisting of a series of first picture information having first coefficient information, said first coefficient information including a matrix of first coefficients;

- 5 (A1-2) converting said first coded moving picture sequence signal inputted in said step (A1-1) to generate a 1st second coded moving picture sequence signal, said 1st second coded moving picture sequence signal consisting of a series of 1st second picture information having 1st second coefficient information, said 1st second coefficient information including a matrix of 1st second coefficients, each of said first coded
- 10 moving picture sequence signal, and said 1st second coded moving picture sequence signal is in the form of a hierarchical structure including one or more sequence layers each having a plurality of screens sharing common information, one or more picture layers each having a plurality of slices sharing common information with respect to one of said screens, one or more slice layers each having a plurality of macroblocks with
- 15 respect to one of said slices, one or more macroblock layers each having a plurality of blocks with respect to one of said macroblocks, and one or more block layers each having block information with respect to one of said blocks;
- (A1-3) inputting said first coded moving picture sequence signal and said 1st second coded moving picture sequence signal from said step (A1-2) to generate a 1st
- 20 differential coded moving picture sequence signal on the basis of said first coefficient information obtained from said series of first picture information of said first coded moving picture sequence signal, and said 1st second coefficient information obtained from said series of said 1st second picture information of said 1st second coded moving picture sequence signal, said 1st differential coded moving picture sequence signal
- 25 being a difference between said first coded moving picture sequence signal and said 1st second coded moving picture sequence signal;
- (A1-4) selectively storing said first coded moving picture sequence signal, said 1st second coded moving picture sequence signal, and said 1st differential coded moving picture sequence signal;
- 30 (A1-5) selectively transmitting said first coded moving picture sequence signal, said 1st second coded moving picture sequence signal, and said 1st differential coded moving picture sequence signal;
- (A1-6) receiving a request signal indicative of a requested coded moving picture sequence signal to be transmitted, said request signal indicative of said requested coded
- 35 moving picture sequence signal being determined on the basis of said first coded moving picture sequence signal, said 1st second coded moving picture sequence signal,

or said 1st differential coded moving picture sequence signal;

(A1-7) extracting said requested coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (A1-4) in response to said request signal; and

- 5 (A1-8) transmitting said requested coded moving picture sequence signal extracted in said step (A1-7), and

said step (Ai) includes the steps of:

- 10 (Ai-1) inputting said (i-1)-th second coded moving picture sequence signal therethrough from said step (A(i-1)), said (i-1)-th second coded moving picture sequence signal generated as a result of encoding original moving picture sequence signal and consisting of a series of (i-1)-th second picture information having (i-1)-th second coefficient information, said (i-1)-th second coefficient information including a matrix of (i-1)-th second coefficients;

- 15 (Ai-2) converting said (i-1)-th second coded moving picture sequence signal inputted through said step (Ai-1) to generate said i-th second coded moving picture sequence signal, said i-th second coded moving picture sequence signal consisting of a series of i-th second picture information having i-th second coefficient information, said i-th second coefficient information including a matrix of i-th second coefficients, each of said (i-1)-th second coded moving picture sequence signal, and said i-th second coded
20 moving picture sequence signal is in the form of a hierarchical structure including one or more sequence layers each having a plurality of screens sharing common information, one or more picture layers each having a plurality of slices sharing common information with respect to one of said screens, one or more slice layers each having a plurality of macroblocks with respect to one of said slices, one or more macroblock layers each
25 having a plurality of blocks with respect to one of said macroblocks, and one or more block layers each having block information with respect to one of said blocks;

- 30 (Ai-3) inputting said (i-1)-th second coded moving picture sequence signal and said i-th second coded moving picture sequence signal from said step (Ai-2) to generate an i-th differential coded moving picture sequence signal on the basis of said (i-1)-th second coefficient information obtained from said series of (i-1)-th second picture information of said (i-1)-th second coded moving picture sequence signal, and said i-th second coefficient information obtained from said series of said i-th second picture information of said i-th second coded moving picture sequence signal, said i-th differential coded moving picture sequence signal being a difference between said
35 (i-1)-th second coded moving picture sequence signal and said i-th second coded moving picture sequence signal;

(Ai-4) selectively storing said (i-1)-th second coded moving picture sequence signal, said i-th second coded moving picture sequence signal, and said i-th differential coded moving picture sequence signal;

5 (Ai-5) selectively transmitting said (i-1)-th second coded moving picture sequence signal, said i-th second coded moving picture sequence signal, and said i-th differential coded moving picture sequence signal;

10 (Ai-6) receiving a request signal indicative of a requested coded moving picture sequence signal to be transmitted, said request signal indicative of said requested coded moving picture sequence signal being determined on the basis of said (i-1)-th second coded moving picture sequence signal, said i-th second coded moving picture sequence signal, or said i-th differential coded moving picture sequence signal;

(Ai-7) extracting said requested coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (Ai-4) in response to said request signal; and

15 (Ai-8) transmitting said requested coded moving picture sequence signal extracted in said step (Ai-7).

58. A multi-input coded signal merging method for inputting a plurality of second coded moving picture sequence signals and a plurality of differential coded moving picture sequence signals to reconstruct a first coded moving picture sequence signal comprising a plurality of steps (B1 to Bn) including a step (B1) up to a step (Bn) wherein n is an integer not less than two,

20 said step (Bi) has the step of inputting a i-th second coded moving picture sequence signal and a i-th differential coded moving picture sequence signal to reconstruct an (i-1)-th second coded moving picture sequence signal wherein i is an integer equal to or less than n, said i-th second coded moving picture sequence signal generated as a result of transcoding said (i-1)-th second coded moving picture sequence signal and consisting of a series of i-th second picture information having i-th second coefficient information, said i-th second coefficient information including a matrix of

30 i-th second coefficients, said (i-1)-th second coded moving picture sequence signal generated as a result of encoding original moving picture sequence signal and consisting of a series of (i-1)-th second picture information having (i-1)-th second coefficient information, said (i-1)-th second coefficient information including a matrix of (i-1)-th second coefficients, said i-th differential coded moving picture sequence signal being a

35 difference between said i-th second coded moving picture sequence signal and said (i-1)-th second coded moving picture sequence signal, said i-th differential coded

moving picture sequence signal including i -th differential coefficient information between said i -th second coefficient information and said $(i-1)$ -th second coefficient information, each of said i -th second coded moving picture sequence signal, said $(i-1)$ -th second coded moving picture sequence signal, and said i -th differential coded moving picture sequence signal is in the form of a hierarchical structure including one or more sequence layers each having a plurality of screens sharing common information, one or more picture layers each having a plurality of slices sharing common information with respect to one of said screens, one or more slice layers each having a plurality of macroblocks with respect to one of said slices, one or more macroblock layers each having a plurality of blocks with respect to one of said macroblocks, and one or more block layers each having block information with respect to one of said blocks, and

said step (B1) is the step of inputting said 1st second coded moving picture sequence signal and said 1st differential coded moving picture sequence signal to reconstruct said first coded moving picture sequence signal, whereby

said step (Bi) includes the steps of:

(Bi-1) receiving a base coded moving picture sequence signal, said base coded moving picture sequence signal being any one of said i -th second coded moving picture sequence signal, said $(i-1)$ -th second coded moving picture sequence signal, and said i -th differential coded moving picture sequence signal;

(Bi-2) storing said base coded moving picture sequence signal received in said step (Bi-1);

(Bi-3) determining a request signal for a requested coded moving picture sequence signal on the basis of said base coded moving picture sequence signal stored in said step (Bi-2);

(Bi-4) transmitting said request signal for said requested coded moving picture sequence signal determined in said step (Bi-3);

(Bi-5) receiving said requested coded moving picture sequence signal;

(Bi-6) extracting said base coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (Bi-2);

(Bi-7) merging said base coded moving picture sequence signal extracted in said step (Bi-6) with said requested coded moving picture sequence signal received in said step (Bi-5) to reconstruct said $(i-1)$ -th second coded moving picture sequence signal on the basis of said i -th second coefficient information obtained from said series of i -th second picture information of said i -th second coded moving picture sequence signal, and said i -th differential coefficient information obtained from said i -th differential coded signal; and

(Bi-8) inputting said reconstructed i-th second coded moving picture sequence signal from said step (Bi-7) to be outputted therethrough,

said step (B1) includes the steps of:

(B1-1) receiving a base coded moving picture sequence signal, said base coded moving picture sequence signal being any one of said first coded moving picture sequence signal, said 1st second coded moving picture sequence signal, and said 1st differential coded moving picture sequence signal;

(B1-2) storing said base coded moving picture sequence signal received in said step (B1-1);

(B1-3) determining a request signal for a requested coded moving picture sequence signal on the basis of said base coded moving picture sequence signal stored in said step (B1-2);

(B1-4) transmitting said request signal for said requested coded moving picture sequence signal determined in said step (B1-3);

(B1-5) receiving said requested coded moving picture sequence signal;

(B1-6) extracting said base coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (B1-2);

(B1-7) merging said base coded moving picture sequence signal extracted in said step (B1-6) with said requested coded moving picture sequence signal received in said step

(B1-5) to reconstruct said first coded moving picture sequence signal on the basis of said 1st second coefficient information obtained from said series of 1st second picture information of said 1st second coded moving picture sequence signal, and said 1st differential coefficient information obtained from said 1st differential coded signal; and

(B1-8) inputting said reconstructed first coded moving picture sequence signal from said step (B1-7) to be outputted therethrough.

59. A multi-output coded signal separating method as set forth in claim 57, in said step (Ai),

said step (Ai-4) has the step of storing said (i-1)-th differential coded moving picture sequence signal generated in said step (Ai-3),

said step (Ai-5) has the step of transmitting said (i-1)-th second coded moving picture sequence signal generated in said step (Ai-2),

said step (Ai-6) has the step of receiving said request signal indicative of a requested (i-1)-th differential coded moving picture sequence signal to be transmitted, said request signal indicative of said requested (i-1)-th differential coded moving picture sequence signal being determined on the basis of said (i-1)-th second coded moving

picture sequence signal,

said step (Ai-7) has the step of extracting said requested (i-1)-th differential coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (Ai-4) in response to said request signal, and

5 said step (Ai-8) has the step of transmitting said requested (i-1)-th differential coded moving picture sequence signal extracted in said step (Ai-7) whereby

said step (A) has the step of inputting a first coded moving picture sequence signal to separate into a plurality of second coded moving picture sequence signals and a plurality of differential coded moving picture sequence signals.

10

60. A multi-input coded signal merging method as set forth in claim 58, in said step (Bi),

said step (Bi-1) has the step of receiving said i-th second coded moving picture sequence signal,

15

said step (Bi-2) has the step of storing said i-th second coded moving picture sequence signal received in said step (Bi-1),

said step (Bi-3) has the step of determining a request signal for a requested differential coded moving picture sequence signal on the basis of said i-th second coded moving picture sequence signal stored in said step (Bi-2),

20

said step (Bi-4) has the step of transmitting said request signal for said requested differential coded moving picture sequence signal determined in said step (Bi-3),

said step (Bi-5) has the step of receiving said requested differential coded moving picture sequence signal,

25

said step (Bi-6) has the step of extracting said i-th second coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (Bi-2), and

said step (Bi-7) has the step of merging said i-th second coded moving picture sequence signal extracted in said step (Bi-6) with said requested differential coded moving picture sequence signal received in said step (Bi-5) to reconstruct said (i-1)-th second coded moving picture sequence signal wherein said 0-th second coded moving picture sequence signal is said first coded moving picture sequence signal.

30

61. A coded signal separating and merging method comprising the steps of:

35

(A) inputting a first coded moving picture sequence signal to separate into a plurality of second coded moving picture sequence signals and a plurality of differential

coded moving picture sequence signals; and

(B) inputting a plurality of second coded moving picture sequence signals and a plurality of differential coded moving picture sequence signals to reconstruct said first coded moving picture sequence signal,

5 said step (A) including a plurality of steps (A1 to A m) including a step (A1) up to a step (A m) wherein m is an integer not less than two;

 said step (B) including a plurality of steps (B1 to B n) including a step (B1) up to a step (B n) wherein n is an integer not less than two and equal to or less than said m ,

 said step (Ai) including the steps of:

10 (Ai-1) inputting an (i-1)-th second coded moving picture sequence signal therethrough from said step (A(i-1)), said (i-1)-th second coded moving picture sequence signal generated as a result of encoding original moving picture sequence signal and consisting of a series of (i-1)-th second picture information having (i-1)-th second coefficient information, said (i-1)-th second coefficient information including a matrix of (i-1)-th
15 second coefficients wherein i is an integer equal to or less than m , and 0-th second coded moving picture sequence signal is said first coded moving picture sequence signal;

 (Ai-2) converting said (i-1)-th second coded moving picture sequence signal inputted through said step (Ai-1) to generate an i -th second coded moving picture sequence
20 signal, said i -th second coded moving picture sequence signal consisting of a series of i -th second picture information having i -th second coefficient information, said i -th second coefficient information including a matrix of second coefficients, each of said (i-1)-th second coded moving picture sequence signal, and said i -th second coded moving picture sequence signal is in the form of a hierarchical structure including one
25 or more sequence layers each having a plurality of screens sharing common information, one or more picture layers each having a plurality of slices sharing common information with respect to one of said screens, one or more slice layers each having a plurality of macroblocks with respect to one of said slices, one or more macroblock layers each having a plurality of blocks with respect to one of said macroblocks, and one or more
30 block layers each having block information with respect to one of said blocks;

 (Ai-3) inputting said (i-1)-th second coded moving picture sequence signal and said i -th second coded moving picture sequence signal from said step (Ai-2) to generate an i -th differential coded moving picture sequence signal on the basis of said (i-1)-th second coefficient information obtained from said series of (i-1)-th second picture
35 information of said (i-1)-th second coded moving picture sequence signal, and said i -th second coefficient information obtained from said series of said i -th second picture

information of said i -th second coded moving picture sequence signal, said i -th differential coded moving picture sequence signal being a difference between said $(i-1)$ -th second coded moving picture sequence signal and said i -th second coded moving picture sequence signal;

- 5 (Ai-4) selectively storing said $(i-1)$ -th second coded moving picture sequence signal, said i -th second coded moving picture sequence signal, and said i -th differential coded moving picture sequence signal; and

- (Ai-5) selectively transmitting said $(i-1)$ -th second coded moving picture sequence signal, said i -th second coded moving picture sequence signal, and said i -th differential coded moving picture sequence signal to said step (Bi);

said step (Bi) including the steps of:

- (Bi-1) receiving a base coded moving picture sequence signal from said step (Ai) or said step $(B(i+1))$, said base coded moving picture sequence signal being any one of said $(i-1)$ -th second coded moving picture sequence signal, said i -th second coded moving picture sequence signal, and said i -th differential coded moving picture sequence signal;

- (Bi-2) storing said base coded moving picture sequence signal received in said step (Bi-1);

- (Bi-3) determining a request signal for a requested coded moving picture sequence signal on the basis of said base coded moving picture sequence signal stored in said step (Bi-2); and

- (Bi-4) transmitting said request signal for said requested coded moving picture sequence signal determined in said step (Bi-3) to said step (Ai);

whereby said step (Ai) further includes the steps of:

- 25 (Ai-6) receiving said request signal transmitted in said step (Bi-4);

- (Ai-7) extracting said requested coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (Ai-4) in response to said request signal; and

- (Ai-8) transmitting said requested coded moving picture sequence signal extracted in said step (Ai-7) to said step (Bi);

said step (Bi) includes the steps of:

- (Bi-5) receiving said requested coded moving picture sequence signal transmitted in said step (Ai-8) from said step (Ai);

- (Bi-6) extracting said base coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (Bi-2);

- (Bi-7) merging said base coded moving picture sequence signal extracted in said step

(Bi-6) with said requested coded moving picture sequence signal received in said step (Bi-5) on the basis of said *i*-th second coefficient information obtained from said series of second picture information of said *i*-th second coded moving picture sequence signal, and said *i*-th differential coefficient information obtained from said *i*-th differential coded signal to reconstruct said (*i*-1)-th second coded moving picture sequence signal; and

(Bi-8) inputting said reconstructed (*i*-1)-th second coded moving picture sequence signal from said step (Bi-7) to be outputted therethrough.

62. A coded signal separating and merging method as set forth in claim 61 in which

said step (Ai-4) has the step of storing said *i*-th differential coded moving picture sequence signal generated in said step (Ai-3),

said step (Ai-5) has the step of transmitting said *i*-th second coded moving picture sequence signal generated in said step (Ai-2),

said step (Bi-1) has the step of receiving said *i*-th second coded moving picture sequence from said step (B(*i*+1)),

said step (Bi-2) has the step of storing said *i*-th second coded moving picture sequence signal received in said step (Bi-1),

said step (Bi-3) has the step of determining a request signal for a requested differential coded moving picture sequence signal on the basis of said *i*-th second coded moving picture sequence signal stored in said step (Bi-2),

said step (Bi-4) has the step of transmitting said request signal for said requested differential coded moving picture sequence signal determined in said step (Bi-3),

said step (Ai-6) has the step of receiving said request signal transmitted in said step (Bi-4),

said step (Ai-7) has the step of extracting said requested differential coded moving picture sequence signal from among coded moving picture sequence signals stored in said step (Ai-4) in response to said request signal,

said step (Ai-8) has the step of transmitting said requested differential coded moving picture sequence signal extracted in said step (Ai-7) to said step (Bi),

said step (Bi-5) has the step of receiving said requested differential coded moving picture sequence signal transmitted in said step (Ai-8),

said step (Bi-6) has the step of extracting said *i*-th second coded moving picture sequence signal from among coded moving picture sequence signals stored in said step

(Bi-2), and

said step (Bi-7) has the step of merging said i-th second coded moving picture sequence signal extracted in said step (Bi-6) with said requested differential coded moving picture sequence signal received in said step (Bi-5) to reconstruct said first coded moving picture sequence signal.

63. A computer program product comprising a computer usable storage medium having computer readable code embodied therein for separating and merging a coded signal comprising:

- 10 (a) computer readable program code for inputting for inputting a first coded moving picture sequence signal to separate into a second coded moving picture sequence signal and a differential coded moving picture sequence signal; and
- (b) computer readable program code for inputting said second coded moving picture sequence signal and said differential coded moving picture sequence signal to
15 reconstruct said first coded moving picture sequence signal,
said computer readable program code (a) including:
 - (a-1) computer readable program code for inputting said first coded moving picture sequence signal therethrough, said first coded moving picture sequence signal generated as a result of encoding original moving picture sequence signal and consisting of a series of first picture information having first coefficient information, said first
20 coefficient information including a matrix of first coefficients;
 - (a-2) computer readable program code for converting said first coded moving picture sequence signal inputted by said computer readable program code (a-1) to generate said second coded moving picture sequence signal, said second coded moving picture sequence signal consisting of a series of second picture information having second
25 coefficient information, said second coefficient information including a matrix of second coefficients, each of said first coded moving picture sequence signal, and said second coded moving picture sequence signal is in the form of a hierarchical structure including one or more sequence layers each having a plurality of screens sharing common information, one or more picture layers each having a plurality of slices sharing common information with respect to one of said screens, one or more slice layers each having a plurality of macroblocks with respect to one of said slices, one or more macroblock layers each having a plurality of blocks with respect to one of said macroblocks, and one or more block layers each having block information with respect
30 to one of said blocks;
 - (a-3) computer readable program code for inputting said first coded moving picture

sequence signal and said second coded moving picture sequence signal to generate a differential coded moving picture sequence signal on the basis of said first coefficient information obtained from said series of first picture information of said first coded moving picture sequence signal, and said second coefficient information obtained from

5 said series of said second picture information of said second coded moving picture sequence signal, said differential coded moving picture sequence signal being a difference between said first coded moving picture sequence signal and said second coded moving picture sequence signal;

(a-4) computer readable program code for selectively storing said first coded moving picture sequence signal, said second coded moving picture sequence signal, and said differential coded moving picture sequence signal; and

10

(a-5) computer readable program code for selectively transmitting said first coded moving picture sequence signal, said second coded moving picture sequence signal, and said differential coded moving picture sequence signal to said computer readable program code (b);

15

said computer readable program code (b) including:

(b-1) computer readable program code for receiving a base coded moving picture sequence signal transmitted by said computer readable program code (a-5), said base coded moving picture sequence signal being any one of said first coded moving picture sequence signal, said second coded moving picture sequence signal, and said differential coded moving picture sequence signal;

20

(b-2) computer readable program code for storing said base coded moving picture sequence signal received by said computer readable program code (b-1);

(b-3) computer readable program code for determining a request signal for a requested coded moving picture sequence signal on the basis of said base coded moving picture sequence signal stored by said computer readable program code (b-2); and

25

(b-4) computer readable program code for transmitting said request signal for said requested coded moving picture sequence signal determined by said computer readable program code (b-3) to said computer readable program code (a);

whereby said computer readable program code (a) further includes:

30

(a-6) computer readable program code for receiving said request signal transmitted by said computer readable program code (b-4);

(a-7) computer readable program code for extracting said requested coded moving picture sequence signal in response to said request signal; and

(a-8) computer readable program code for transmitting said requested coded moving picture sequence signal extracted by said computer readable program code (a-7) to said

35

computer readable program code (b);

said computer readable program code (b) includes:

(b-5) computer readable program code for receiving said requested coded moving picture sequence signal transmitted by said computer readable program code (a-8);

5 (b-6) computer readable program code for extracting said base coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (b-2);

(b-7) computer readable program code for merging said base coded moving picture sequence signal extracted by said computer readable program code (b-6) with said
10 requested coded moving picture sequence signal received by said computer readable program code (b-5) on the basis of said second coefficient information obtained from said series of second picture information of said second coded moving picture sequence signal, and said differential coefficient information obtained from said differential coded signal to reconstruct said first coded moving picture sequence signal; and

15 (b-8) computer readable program code for inputting said reconstructed first coded moving picture sequence signal generated by said computer readable program code (b-7) to be outputted therethrough.

64. A computer program product as set forth in claim 63, in which

20 said computer readable program code (a-4) has computer readable program code for storing said differential coded moving picture sequence signal generated by said computer readable program code (a-3),

said computer readable program code (a-5) has computer readable program code for transmitting said second coded moving picture sequence signal generated by
25 said computer readable program code (a-2),

said computer readable program code (b-1) has computer readable program code for receiving said second coded moving picture sequence signal transmitted by said computer readable program code (a-5),

said computer readable program code (b-2) has computer readable program
30 code for storing said second coded moving picture sequence signal received by said computer readable program code (b-1),

said computer readable program code (b-3) has computer readable program code for determining a request signal for a requested differential coded moving picture sequence signal on the basis of said second coded moving picture sequence signal
35 stored by said computer readable program code (b-2),

said computer readable program code (b-4) has computer readable program

code for transmitting said request signal for said requested differential coded moving picture sequence signal determined by said computer readable program code (b-3),

5 said computer readable program code (a-6) has computer readable program code for receiving said request signal transmitted by said computer readable program code (b-4),

said computer readable program code (a-7) has computer readable program code for extracting said requested differential coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (a-4) in response to said request signal,

10 said computer readable program code (a-8) has computer readable program code for transmitting said requested differential coded moving picture sequence signal extracted by said computer readable program code (a-7) to said computer readable program code (b),

15 said computer readable program code (b-5) has computer readable program code for receiving said requested differential coded moving picture sequence signal transmitted by said computer readable program code (a-8),

20 said computer readable program code (b-6) has computer readable program code for extracting said second coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (b-2), and

said computer readable program code (b-7) has computer readable program code for merging said second coded moving picture sequence signal extracted by said computer readable program code (b-6) with said requested differential coded moving picture sequence signal received by said computer readable program code (b-5) to
25 reconstruct said first coded moving picture sequence signal.

65. A computer program product as set forth in claim 64, in which

30 said computer readable program code (b) further includes computer readable program code for decoding said second coded moving picture sequence signal received by said computer readable program code (b-1).

66. A computer program product as set forth in claim 64 or claim 65, in which

35 said computer readable program code (b) further includes a (b-9) computer readable program code for cutting and combining component parts of said second coded moving picture sequence signal stored by said computer readable program code (b-2) to generate an edited second coded moving picture sequence signal in a desired size,

said computer readable program code (b-3) has computer readable program code for determining a request signal for a requested differential coded moving picture sequence signal on the basis of said edited second coded moving picture sequence signal generated by said computer readable program code (b-9),

5 said computer readable program code (b-4) has computer readable program code for transmitting said request signal for said requested differential coded moving picture sequence signal determined by said computer readable program code (b-3) to said computer readable program code (a),

10 said computer readable program code (a-7) has computer readable program code for extracting said requested differential coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (a-4) in response to said request signal, and

15 said computer readable program code (b-7) has computer readable program code for merging said edited second coded moving picture sequence signal generated by said computer readable program code (b-9) with said requested differential coded moving picture sequence signal received by said computer readable program code (b-5) to reconstruct said first coded moving picture sequence signal in said desired size.

67. A computer program product as set forth in claim 63, in which

20 said computer readable program code (a-4) has computer readable program code for storing said second coded moving picture sequence signal generated by said computer readable program code (a-2),

25 said computer readable program code (a-5) has computer readable program code for transmitting said differential coded moving picture sequence signal generated by said computer readable program code (a-3) to said computer readable program code (b),

 said computer readable program code (b-1) has computer readable program code for receiving said differential coded moving picture sequence signal transmitted by said computer readable program code (a-5),

30 said computer readable program code (b-2) has computer readable program code for storing said differential coded moving picture sequence signal received by said computer readable program code (b-1),

35 computer readable program code (b-3) has computer readable program code for determining a request signal for a requested second coded moving picture sequence signal on the basis of said differential coded moving picture sequence signal stored by said computer readable program code (b-2),

said computer readable program code (b-4) has computer readable program code for transmitting said request signal for said requested second coded moving picture sequence signal determined by said computer readable program code (b-3),

5 said computer readable program code (a-6) has computer readable program code for receiving said request signal transmitted by said computer readable program code (b-4),

10 said computer readable program code (a-7) has computer readable program code for extracting said requested second coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (a-4) in response to said request signal,

 said computer readable program code (a-8) has computer readable program code for transmitting said requested second coded moving picture sequence signal extracted by said computer readable program code (a-7) to said computer readable program code (b),

15 said computer readable program code (b-5) has computer readable program code for receiving said requested second coded moving picture sequence signal transmitted by said computer readable program code (a-8),

20 said computer readable program code (b-6) has computer readable program code for extracting said differential coded moving picture sequence signal stored by said computer readable program code (b-2), and

25 said computer readable program code (b-7) has computer readable program code for merging said differential coded moving picture sequence signal extracted by said computer readable program code (b-6) with said second coded moving picture sequence signal received by said computer readable program code (b-5) to reconstruct said first coded moving picture sequence signal.

68. A computer program product as set forth in claim 67, in which

30 said computer readable program code (a-5) has computer readable program code for transmitting said differential coded moving picture sequence signal by way of broadcasting.

69. A computer program product as set forth in any one of claim 64, claim 65, and claim 68, in which

35 said computer readable program code (b) further includes computer readable program code for storing said reconstructed first coded moving picture sequence signal reconstructed by said computer readable program code (b-7).

70. A computer program product as set forth in claim 63, in which
said computer readable program code (b) further includes:

(b-10) computer readable program code for decoding said first coded moving picture
5 sequence signal or said second coded moving picture sequence signal; and

(b-11) computer readable program code for inputting said first coded moving picture
sequence signal to generate said second coded moving picture sequence signal,

said computer readable program code (a-5) has computer readable program
code for transmitting said first coded moving picture sequence signal,

10 said computer readable program code (a-4) has computer readable program
code for storing said differential coded moving picture sequence signal generated by
said computer readable program code (a-3),

said computer readable program code (b-1) has computer readable program
code for receiving said first coded moving picture sequence signal transmitted by said
15 computer readable program code (a-5),

said computer readable program code (b-10) has computer readable program
code for decoding said first coded moving picture sequence signal received by said
computer readable program code (b-1),

said computer readable program code (b-11) has computer readable program
20 code for inputting said first coded moving picture sequence signal received by said
computer readable program code (b-1) to generate said second coded moving picture
sequence signal,

said computer readable program code (b-2) has computer readable program
code for storing said second coded moving picture sequence signal generated by said
25 computer readable program code (b-11),

said computer readable program code (b-3) has computer readable program
code for determining a request signal for a requested differential coded moving picture
sequence signal on the basis of said second coded moving picture sequence signal
stored by said computer readable program code (b-2),

30 said computer readable program code (b-4) has computer readable program
code for transmitting said request signal for said requested differential coded moving
picture sequence signal determined by said computer readable program code (b-3) to
said computer readable program code (a),

said computer readable program code (a-6) has computer readable program
35 code for receiving said request signal transmitted by said computer readable program
code (b-4),

said computer readable program code (a-7) has computer readable program code for extracting said requested differential coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (a-4) in response to said request signal,

5 said computer readable program code (a-8) has computer readable program code for transmitting said requested differential coded moving picture sequence signal extracted by said computer readable program code (a-7) to said computer readable program code (b),

10 said computer readable program code (b-5) has computer readable program code for receiving said requested differential coded moving picture sequence signal transmitted by said computer readable program code (a-8),

15 said computer readable program code (b-6) has computer readable program code for extracting said second coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (b-2), and

20 said computer readable program code (b-7) has computer readable program code for merging said second coded moving picture sequence signal extracted by said computer readable program code (b-6) with said requested differential coded moving picture sequence signal received by said computer readable program code (b-5) to reconstruct said first coded moving picture sequence signal in said desired size.

71. A computer program product as set forth in claim 63, in which said computer readable program code (b) further includes:

25 (b-10) computer readable program code for decoding said first coded moving picture sequence signal or said second coded moving picture sequence signal; and

 (b-12) computer readable program code for inputting said first coded moving picture sequence signal to generate said differential coded moving picture sequence signal,

 said computer readable program code (a-5) has computer readable program code for transmitting said first coded moving picture sequence signal,

30 said computer readable program code (a-4) has computer readable program code for storing said second coded moving picture sequence signal generated by said computer readable program code (a-2),

35 said computer readable program code (b-1) has computer readable program code for receiving said first coded moving picture sequence signal transmitted by said computer readable program code (a-5),

 said computer readable program code (b-10) has computer readable program

code for decoding said first coded moving picture sequence signal received by said computer readable program code (b-1),

5 said computer readable program code (b-12) has computer readable program code for inputting said first coded moving picture sequence signal received by said computer readable program code (b-1) to generate said differential coded moving picture sequence signal,

 said computer readable program code (b-2) has computer readable program code for storing said differential coded moving picture sequence signal generated by said computer readable program code (b-11),

10 said computer readable program code (b-3) has computer readable program code for determining a request signal for a requested second coded moving picture sequence signal on the basis of said differential coded moving picture sequence signal stored by said computer readable program code (b-2),

15 said computer readable program code (b-4) has computer readable program code for transmitting said request signal for said requested second coded moving picture sequence signal determined by said computer readable program code (b-3) to said computer readable program code (a),

20 said computer readable program code (a-6) has computer readable program code for receiving said request signal transmitted by said computer readable program code (b-4),

 said computer readable program code (a-7) has computer readable program code for extracting said requested second coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (a-4) in response to said request signal,

25 said computer readable program code (a-8) has computer readable program code for transmitting said requested second coded moving picture sequence signal extracted by said computer readable program code (a-7) to said computer readable program code (b),

30 said computer readable program code (b-5) has computer readable program code for receiving said requested second coded moving picture sequence signal transmitted by said computer readable program code (a-8),

35 said computer readable program code (b-6) has computer readable program code for extracting said differential coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (b-2), and

 said computer readable program code (b-7) has computer readable program

code for merging said differential coded moving picture sequence signal extracted by said computer readable program code (b-6) with said requested second coded moving picture sequence signal received by said computer readable program code (b-5) to reconstruct said first coded moving picture sequence signal in said desired size.

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72. A computer program product comprising a computer usable storage medium having computer readable code embodied therein for inputting a first coded moving picture sequence signal to separate into a second coded moving picture sequence signal and a differential coded moving picture sequence signal comprising:

- 10 (a-1) computer readable program code for inputting said first coded moving picture sequence signal therethrough, said first coded moving picture sequence signal generated as a result of encoding original moving picture sequence signal and consisting of a series of first picture information having first coefficient information, said first coefficient information including a matrix of first coefficients;
- 15 (a-2) computer readable program code for converting said first coded moving picture sequence signal inputted by said computer readable program code (a-1) to generate said second coded moving picture sequence signal, said second coded moving picture sequence signal consisting of a series of second picture information having second coefficient information, said second coefficient information including a matrix of
- 20 second coefficients, each of said first coded moving picture sequence signal, and said second coded moving picture sequence signal is in the form of a hierarchical structure including one or more sequence layers each having a plurality of screens sharing common information, one or more picture layers each having a plurality of slices sharing common information with respect to one of said screens, one or more slice
- 25 layers each having a plurality of macroblocks with respect to one of said slices, one or more macroblock layers each having a plurality of blocks with respect to one of said macroblocks, and one or more block layers each having block information with respect to one of said blocks;
- 30 (a-3) computer readable program code for inputting said first coded moving picture sequence signal and said second coded moving picture sequence signal from said computer readable program code (a-2) to generate a differential coded moving picture sequence signal on the basis of said first coefficient information obtained from said series of first picture information of said first coded moving picture sequence signal, and said second coefficient information obtained from said series of said second picture
- 35 information of said second coded moving picture sequence signal, said differential coded moving picture sequence signal being a difference between said first coded

moving picture sequence signal and said second coded moving picture sequence signal;

(a-4) computer readable program code for selectively storing said first coded moving picture sequence signal, said second coded moving picture sequence signal, and said differential coded moving picture sequence signal;

5 (a-5) computer readable program code for selectively transmitting said first coded moving picture sequence signal, said second coded moving picture sequence signal, and said differential coded moving picture sequence signal;

(a-6) computer readable program code for receiving a request signal indicative of a requested coded moving picture sequence signal to be transmitted, said request signal
10 indicative of said requested coded moving picture sequence signal being determined on the basis of said first coded moving picture sequence signal, said second coded moving picture sequence signal, or said differential coded moving picture sequence signal;

(a-7) computer readable program code for extracting said requested coded moving picture sequence signal from among coded moving picture sequence signals stored by
15 said computer readable program code (a-4) in response to said request signal; and

(a-8) computer readable program code for transmitting said requested coded moving picture sequence signal extracted by said computer readable program code (a-7).

73. A computer program product as set forth in claim 72, in which

20 said computer readable program code (a-4) has computer readable program code for storing said differential coded moving picture sequence signal generated by said computer readable program code (a-3),

said computer readable program code (a-5) has computer readable program code for transmitting said second coded moving picture sequence signal generated by
25 said computer readable program code (a-2),

said computer readable program code (a-6) has computer readable program code for receiving said request signal indicative of a requested differential coded moving picture sequence signal to be transmitted, said request signal indicative of said requested differential coded moving picture sequence signal being determined on the
30 basis of said second coded moving picture sequence signal,

said computer readable program code (a-7) has computer readable program code for extracting said requested differential coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (a-4) in response to said request signal, and

35 said computer readable program code (a-8) has computer readable program code for transmitting said requested differential coded moving picture sequence signal

extracted by said computer readable program code (a-7).

74. A computer program product as set forth in claim 73, in which

5 said computer readable program code (a-6) has computer readable program code for receiving said request signal indicative of said requested differential coded moving picture sequence signal to be transmitted, said request signal indicative of said requested differential coded moving picture sequence signal being determined on the basis of an edited second coded moving picture sequence signal generated by cutting and combining component parts of said second coded moving picture sequence signal,

10 said computer readable program code (a-7) has computer readable program code for extracting said requested differential coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (a-4) in response to said request signal, and

15 said computer readable program code (a-8) has computer readable program code for transmitting said requested differential coded moving picture sequence signal extracted by said computer readable program code (a-7).

75. A computer program product as set forth in claim 72, in which

20 said computer readable program code (a-4) has computer readable program code for storing said second coded moving picture sequence signal generated by said computer readable program code (a-2),

said computer readable program code (a-5) has computer readable program code for transmitting said differential coded moving picture sequence signal generated by said computer readable program code (a-3),

25 said computer readable program code (a-6) has computer readable program code for receiving said request signal indicative of said requested second coded moving picture sequence signal to be transmitted, said request signal indicative of said requested second coded moving picture sequence signal being determined on the basis of said differential coded moving picture sequence signal,

30 said computer readable program code (a-7) has computer readable program code for extracting said requested second coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (a-4) in response to said request signal, and

35 said computer readable program code (a-8) has computer readable program code for transmitting said requested second coded moving picture sequence signal extracted by said computer readable program code (a-7).

76. A computer program product as set forth in claim 75, in which
said computer readable program code (a-5) has computer readable program
code for transmitting said differential coded moving picture sequence signal by way of
5 broadcasting.

77. A computer program product as set forth in claim 72, in which
said computer readable program code (a-5) has computer readable program
code for transmitting said first coded moving picture sequence signal,

10 said computer readable program code (a-4) has computer readable program
code for storing said differential coded moving picture sequence signal generated by
said computer readable program code (a-3),

15 said computer readable program code (a-6) has computer readable program
code for receiving said request signal indicative of a requested differential coded
moving picture sequence signal to be transmitted, said request signal indicative of said
requested differential coded moving picture sequence signal being determined on the
basis of a second coded moving picture sequence signal generated in accordance with
said first coded moving picture sequence signal,

20 said computer readable program code (a-7) has computer readable program
code for extracting said requested differential coded moving picture sequence signal
from among coded moving picture sequence signals stored by said computer readable
program code (a-4) in response to said request signal, and

25 said computer readable program code (a-8) has computer readable program
code for transmitting said requested differential coded moving picture sequence signal
extracted by said computer readable program code (a-7).

78. A computer program product as set forth in claim 72, in which
said computer readable program code (a-5) has computer readable program
code for transmitting said first coded moving picture sequence signal,

30 said computer readable program code (a-4) has computer readable program
code for storing said second coded moving picture sequence signal generated by said
computer readable program code (a-2),

35 said computer readable program code (a-6) has computer readable program
code for receiving said request signal indicative of a requested second coded moving
picture sequence signal to be transmitted, said request signal indicative of said requested
second coded moving picture sequence signal being determined on the basis of a

differential coded moving picture sequence signal generated in accordance with said first coded moving picture sequence signal,

5 said computer readable program code (a-7) has computer readable program code for extracting said requested second coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (a-4) in response to said request signal, and

 said computer readable program code (a-8) has computer readable program code for transmitting said requested second coded moving picture sequence signal extracted by said computer readable program code (a-7).

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79. A computer program product comprising a computer usable storage medium having computer readable code embodied therein for inputting a second coded moving picture sequence signal and a differential coded moving picture sequence signal to reconstruct a first coded moving picture sequence signal, said second coded moving picture sequence signal generated as a result of transcoding said first coded moving picture sequence signal and consisting of a series of second picture information having second coefficient information, said second coefficient information including a matrix of second coefficients, said first coded moving picture sequence signal generated as a result of encoding original moving picture sequence signal and consisting of a series of first picture information having first coefficient information, said first coefficient information including a matrix of first coefficients, said differential coded moving picture sequence signal being a difference between said first coded moving picture sequence signal and said second coded moving picture sequence signal, said differential coded moving picture sequence signal including differential coefficient information between said first coefficient information and said second coefficient information, each of said first coded moving picture sequence signal, said second coded moving picture sequence signal, and said differential coded moving picture sequence signal is in the form of a hierarchical structure including one or more sequence layers each having a plurality of screens sharing common information, one or more picture layers each having a plurality of slices sharing common information with respect to one of said screens, one or more slice layers each having a plurality of macroblocks with respect to one of said slices, one or more macroblock layers each having a plurality of blocks with respect to one of said macroblocks, and one or more block layers each having block information with respect to one of said blocks, said computer readable program code (b) comprising:

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(b-1) computer readable program code for receiving a base coded moving picture

sequence signal, said base coded moving picture sequence signal being any one of said first coded moving picture sequence signal, said second coded moving picture sequence signal, and said differential coded moving picture sequence signal;

(b-2) computer readable program code for storing said base coded moving picture sequence signal received by said computer readable program code (b-1);

(b-3) computer readable program code for determining a request signal for a requested coded moving picture sequence signal on the basis of said base coded moving picture sequence signal stored by said computer readable program code (b-2);

(b-4) computer readable program code for transmitting said request signal for said requested coded moving picture sequence signal determined by said computer readable program code (b-3);

(b-5) computer readable program code for receiving said requested coded moving picture sequence signal;

(b-6) computer readable program code for extracting said base coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (b-2);

(b-7) computer readable program code for merging said base coded moving picture sequence signal extracted by said computer readable program code (b-6) with said requested coded moving picture sequence signal received by said computer readable program code (b-5) to reconstruct said first coded moving picture sequence signal on the basis of said second coefficient information obtained from said series of second picture information of said second coded moving picture sequence signal, and said differential coefficient information obtained from said differential coded signal; and

(b-8) computer readable program code for inputting said reconstructed first coded moving picture sequence signal generated by said computer readable program code (b-7) to be outputted therethrough.

80. A computer program product as set forth in claim 79, in which

said computer readable program code (b-1) has computer readable program code for receiving said second coded moving picture sequence signal,

said computer readable program code (b-2) has computer readable program code for storing said second coded moving picture sequence signal received by said computer readable program code (b-1),

said computer readable program code (b-3) has computer readable program code for determining a request signal for a requested differential coded moving picture sequence signal on the basis of said second coded moving picture sequence signal

stored by said computer readable program code (b-2),

said computer readable program code (b-4) has computer readable program code for transmitting a request signal for said requested differential coded moving picture sequence signal determined by said computer readable program code (b-3),

5 said computer readable program code (b-5) has computer readable program code for receiving said requested differential coded moving picture sequence signal,

10 said computer readable program code (b-6) has computer readable program code for extracting said second coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (b-2), and

15 said computer readable program code (b-7) has computer readable program code for merging said second coded moving picture sequence signal extracted by said computer readable program code (b-6) with said requested differential coded moving picture sequence signal received by said computer readable program code (b-5) to reconstruct said first coded moving picture sequence signal.

20 81. A computer program product as set forth in claim 80 further comprising computer readable program code for decoding said second coded moving picture sequence signal received by said computer readable program code (b-1).

25 82. A computer program product as set forth in claim 80 or claim 81 further comprising computer readable program code (b-9) for cutting and combining component parts of said second coded moving picture sequence signal stored by said computer readable program code (b-2) to generate an edited second coded moving picture sequence signal in a desired size, in which

30 said computer readable program code (b-3) has computer readable program code for determining a request signal for a requested differential coded moving picture sequence signal on the basis of said edited second coded moving picture sequence signal generated by said computer readable program code (b-9),

35 said computer readable program code (b-4) has computer readable program code for transmitting said request signal for said requested differential coded moving picture sequence signal determined by said computer readable program code (b-3), and

 said computer readable program code (b-7) has computer readable program code for merging said edited second coded moving picture sequence signal generated in said editing computer readable program code (b-9) with said requested differential coded moving picture sequence signal received by said computer readable program

code (b-5) to reconstruct said first coded moving picture sequence signal in said desired size.

83. A computer program product as set forth in claim 79, in which

5 said computer readable program code (b-1) has computer readable program code for receiving said differential coded moving picture sequence signal,

said computer readable program code (b-2) has computer readable program code for storing said differential coded moving picture sequence signal received by said computer readable program code (b-1),

10 computer readable program code (b-3) has computer readable program code for determining a request signal for a requested second coded moving picture sequence signal on the basis of said differential coded moving picture sequence signal stored by said computer readable program code (b-2),

15 said computer readable program code (b-4) has computer readable program code for transmitting said request signal for said requested second coded moving picture sequence signal determined by said computer readable program code (b-3),

said computer readable program code (b-5) has computer readable program code for receiving said requested second coded moving picture sequence signal,

20 said computer readable program code (b-6) has computer readable program code for extracting said differential coded moving picture sequence signal stored by said computer readable program code (b-2), and

25 said computer readable program code (b-7) has computer readable program code for merging said differential coded moving picture sequence signal extracted by said computer readable program code (b-6) with said second coded moving picture sequence signal received by said computer readable program code (b-5) to reconstruct said first coded moving picture sequence signal.

84. A computer program product as set forth in claim 83, in which

30 said computer readable program code (b-1) has computer readable program code for receiving said differential coded moving picture sequence signal by way of broadcasting.

85. A computer program product as set forth in any one of claim 80, claim 81, and 84, further comprising computer readable program code for storing said reconstructed
35 first coded moving picture sequence signal reconstructed by said computer readable program code (b-7).

86. A computer program product as set forth in claim 79 further comprising:

(b-10) computer readable program code for decoding said first coded moving picture sequence signal or said second coded moving picture sequence signal; and

5 (b-11) computer readable program code for inputting said first coded moving picture sequence signal to generate said second coded moving picture sequence signal, in which said computer readable program code (b-1) has computer readable program code for receiving said first coded moving picture sequence signal,

10 said computer readable program code (b-10) has computer readable program code for decoding said first coded moving picture sequence signal received by said computer readable program code (b-1),

15 said computer readable program code (b-11) has computer readable program code for inputting said first coded moving picture sequence signal received by said computer readable program code (b-1) to generate said second coded moving picture sequence signal,

said computer readable program code (b-2) has computer readable program code for storing said second coded moving picture sequence signal generated by said computer readable program code (b-11),

20 said computer readable program code (b-3) has computer readable program code for determining a request signal for a requested differential coded moving picture sequence signal on the basis of said second coded moving picture sequence signal stored by said computer readable program code (b-2),

25 said computer readable program code (b-4) has computer readable program code for transmitting said request signal for said requested differential coded moving picture sequence signal determined by said computer readable program code (b-3),

said computer readable program code (b-5) has computer readable program code for receiving said requested differential coded moving picture sequence signal,

30 said computer readable program code (b-6) has computer readable program code for extracting said second coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (b-2), and

35 said computer readable program code (b-7) has computer readable program code for merging said second coded moving picture sequence signal extracted by said computer readable program code (b-6) with said requested differential coded moving picture sequence signal received by said computer readable program code (b-5) to reconstruct said first coded moving picture sequence signal in said desired size.

87. A computer program product as set forth in claim 79 further comprising:

(b-10) computer readable program code for decoding said first coded moving picture sequence signal or said second coded moving picture sequence signal; and

5 (b-12) computer readable program code for inputting said first coded moving picture sequence signal to generate said differential coded moving picture sequence signal,

said computer readable program code (b-1) has computer readable program code for receiving said first coded moving picture sequence signal,

10 said computer readable program code (b-10) has computer readable program code for decoding said first coded moving picture sequence signal received by said computer readable program code (b-1),

15 said computer readable program code (b-12) has computer readable program code for inputting said first coded moving picture sequence signal received by said computer readable program code (b-1) to generate said differential coded moving picture sequence signal,

said computer readable program code (b-2) has computer readable program code for storing said differential coded moving picture sequence signal generated by said computer readable program code (b-11),

20 said computer readable program code (b-3) has computer readable program code for determining a request signal for a requested second coded moving picture sequence signal on the basis of said differential coded moving picture sequence signal stored by said computer readable program code (b-2),

25 said computer readable program code (b-4) has computer readable program code for transmitting said request signal for said requested second coded moving picture sequence signal determined by said computer readable program code (b-3),

said computer readable program code (b-5) has computer readable program code for receiving said requested second coded moving picture sequence signal,

30 said computer readable program code (b-6) has computer readable program code for extracting said differential coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (b-2), and

35 said computer readable program code (b-7) has computer readable program code for merging said differential coded moving picture sequence signal extracted by said computer readable program code (b-6) with said requested second coded moving picture sequence signal received by said computer readable program code (b-5) to reconstruct said first coded moving picture sequence signal in said desired size.

88. A computer program product comprising a computer usable storage medium having computer readable code embodied therein for inputting a first coded moving picture sequence signal to separate into a plurality of second coded moving picture sequence signals and a plurality of differential coded moving picture sequence signals comprising a plurality of computer readable program codes (A1 to A_m) including computer readable program code (A-1) up to computer readable program codes (A_m) wherein **m** is an integer not less than two;

said computer readable program code (A-1) is computer readable program code for inputting said first coded moving picture sequence signal to separate into a 1st second coded moving picture sequence signal and a 1st differential coded moving picture sequence signal, said 1st differential coded moving picture sequence signal being a difference between said first coded moving picture sequence signal and said 1st second coded moving picture sequence signal, and

said computer readable program code (A_i) is computer readable program code for inputting an (i-1)-th second coded moving picture sequence signal to separate into an i-th second coded moving picture sequence signal and an i-th differential coded moving picture sequence signal, said i-th differential coded moving picture sequence signal being a difference between said (i-1)-th second coded moving picture sequence signal and said i-th second coded moving picture sequence signal wherein **i** is an integer equal to or less than **m**,

whereby said computer readable program code (A-1) includes:

(A1-1) computer readable program code for inputting said first coded moving picture sequence signal therethrough, said first coded moving picture sequence signal generated as a result of encoding original moving picture sequence signal and consisting of a series of first picture information having first coefficient information, said first coefficient information including a matrix of first coefficients;

(A1-2) computer readable program code for converting said first coded moving picture sequence signal inputted by said computer readable program code (A1-1) to generate a 1st second coded moving picture sequence signal, said 1st second coded moving picture sequence signal consisting of a series of 1st second picture information having 1st second coefficient information, said 1st second coefficient information including a matrix of 1st second coefficients, each of said first coded moving picture sequence signal, and said 1st second coded moving picture sequence signal is in the form of a hierarchical structure including one or more sequence layers each having a plurality of screens sharing common information, one or more picture layers each having a plurality

of slices sharing common information with respect to one of said screens, one or more slice layers each having a plurality of macroblocks with respect to one of said slices, one or more macroblock layers each having a plurality of blocks with respect to one of said macroblocks, and one or more block layers each having block information with respect to one of said blocks;

(A1-3) computer readable program code for inputting said first coded moving picture sequence signal and said 1st second coded moving picture sequence signal from said computer readable program code (A1-2) to generate a 1st differential coded moving picture sequence signal on the basis of said first coefficient information obtained from said series of first picture information of said first coded moving picture sequence signal, and said 1st second coefficient information obtained from said series of said 1st second picture information of said 1st second coded moving picture sequence signal, said 1st differential coded moving picture sequence signal being a difference between said first coded moving picture sequence signal and said 1st second coded moving picture sequence signal;

(A1-4) computer readable program code for selectively storing said first coded moving picture sequence signal, said 1st second coded moving picture sequence signal, and said 1st differential coded moving picture sequence signal;

(A1-5) computer readable program code for selectively transmitting said first coded moving picture sequence signal, said 1st second coded moving picture sequence signal, and said 1st differential coded moving picture sequence signal;

(A1-6) computer readable program code for receiving a request signal indicative of a requested coded moving picture sequence signal to be transmitted, said request signal indicative of said requested coded moving picture sequence signal being determined on the basis of said first coded moving picture sequence signal, said 1st second coded moving picture sequence signal, or said 1st differential coded moving picture sequence signal;

(A1-7) computer readable program code for extracting said requested coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (A1-4) in response to said request signal; and

(A1-8) computer readable program code for transmitting said requested coded moving picture sequence signal extracted by said computer readable program code (A1-7), and said computer readable program code (Ai) includes:

(Ai-1) computer readable program code for inputting said (i-1)-th second coded moving picture sequence signal therethrough from said computer readable program code (A(i-1)), said (i-1)-th second coded moving picture sequence signal generated as a

result of encoding original moving picture sequence signal and consisting of a series of
 (i-1)-th second picture information having (i-1)-th second coefficient information, said
 (i-1)-th second coefficient information including a matrix of (i-1)-th second coefficients;
 (Ai-2) computer readable program code for converting said (i-1)-th second coded
 5 moving picture sequence signal inputted through said computer readable program code
 (Ai-1) to generate said i-th second coded moving picture sequence signal, said i-th
 second coded moving picture sequence signal consisting of a series of i-th second
 picture information having i-th second coefficient information, said i-th second
 coefficient information including a matrix of i-th second coefficients, each of said
 10 (i-1)-th second coded moving picture sequence signal, and said i-th second coded
 moving picture sequence signal is in the form of a hierarchical structure including one
 or more sequence layers each having a plurality of screens sharing common information,
 one or more picture layers each having a plurality of slices sharing common information
 with respect to one of said screens, one or more slice layers each having a plurality of
 15 macroblocks with respect to one of said slices, one or more macroblock layers each
 having a plurality of blocks with respect to one of said macroblocks, and one or more
 block layers each having block information with respect to one of said blocks;
 (Ai-3) computer readable program code for inputting said (i-1)-th second coded
 moving picture sequence signal and said i-th second coded moving picture sequence
 20 signal from said computer readable program code (Ai-2) to generate an i-th differential
 coded moving picture sequence signal on the basis of said (i-1)-th second coefficient
 information obtained from said series of (i-1)-th second picture information of said
 (i-1)-th second coded moving picture sequence signal, and said i-th second coefficient
 information obtained from said series of said i-th second picture information of said i-th
 25 second coded moving picture sequence signal, said i-th differential coded moving
 picture sequence signal being a difference between said (i-1)-th second coded moving
 picture sequence signal and said i-th second coded moving picture sequence signal;
 (Ai-4) computer readable program code for selectively storing said (i-1)-th second
 coded moving picture sequence signal, said i-th second coded moving picture sequence
 30 signal, and said i-th differential coded moving picture sequence signal;
 (Ai-5) computer readable program code for selectively transmitting said (i-1)-th
 second coded moving picture sequence signal, said i-th second coded moving picture
 sequence signal, and said i-th differential coded moving picture sequence signal;
 (Ai-6) computer readable program code for receiving a request signal indicative of a
 35 requested coded moving picture sequence signal to be transmitted, said request signal
 indicative of said requested coded moving picture sequence signal being determined on

the basis of said (i-1)-th second coded moving picture sequence signal, said i-th second coded moving picture sequence signal, or said i-th differential coded moving picture sequence signal;

(Ai-7) computer readable program code for extracting said requested coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (Ai-4) in response to said request signal; and

(Ai-8) computer readable program code for transmitting said requested coded moving picture sequence signal extracted by said computer readable program code (Ai-7).

89. A computer program product comprising a computer usable storage medium having computer readable code embodied therein for inputting a plurality of second coded moving picture sequence signals and a plurality of differential coded moving picture sequence signals to reconstruct a first coded moving picture sequence signal comprising a plurality of computer readable program code (B1 to Bn) including computer readable program code (B-1) up to a computer readable program code (Bn) wherein n is an integer not less than two,

said computer readable program code (Bi) has computer readable program code for inputting a i-th second coded moving picture sequence signal and a i-th differential coded moving picture sequence signal to reconstruct an (i-1)-th second coded moving picture sequence signal wherein i is an integer equal to or less than n, said i-th second coded moving picture sequence signal generated as a result of transcoding said (i-1)-th second coded moving picture sequence signal and consisting of a series of i-th second picture information having i-th second coefficient information, said i-th second coefficient information including a matrix of i-th second coefficients, said (i-1)-th second coded moving picture sequence signal generated as a result of encoding original moving picture sequence signal and consisting of a series of (i-1)-th second picture information having (i-1)-th second coefficient information, said (i-1)-th second coefficient information including a matrix of (i-1)-th second coefficients, said i-th differential coded moving picture sequence signal being a difference between said i-th second coded moving picture sequence signal and said (i-1)-th second coded moving picture sequence signal, said i-th differential coded moving picture sequence signal including i-th differential coefficient information between said i-th second coefficient information and said (i-1)-th second coefficient information, each of said i-th second coded moving picture sequence signal, said (i-1)-th second coded moving picture sequence signal, and said i-th differential coded moving picture sequence signal is in the form of a hierarchical structure including one or more sequence layers each having a

plurality of screens sharing common information, one or more picture layers each having a plurality of slices sharing common information with respect to one of said screens, one or more slice layers each having a plurality of macroblocks with respect to one of said slices, one or more macroblock layers each having a plurality of blocks with respect to one of said macroblocks, and one or more block layers each having block information with respect to one of said blocks, and

said computer readable program code (B-1) is computer readable program code for inputting said 1st second coded moving picture sequence signal and said 1st differential coded moving picture sequence signal to reconstruct said first coded moving picture sequence signal, whereby

said computer readable program code (Bi) includes:

(Bi-1) computer readable program code for receiving a base coded moving picture sequence signal, said base coded moving picture sequence signal being any one of said i-th second coded moving picture sequence signal, said (i-1)-th second coded moving picture sequence signal, and said i-th differential coded moving picture sequence signal;

(Bi-2) computer readable program code for storing said base coded moving picture sequence signal received by said computer readable program code (Bi-1);

(Bi-3) computer readable program code for determining a request signal for a requested coded moving picture sequence signal on the basis of said base coded moving picture sequence signal stored by said computer readable program code (Bi-2);

(Bi-4) computer readable program code for transmitting said request signal for said requested coded moving picture sequence signal determined by said computer readable program code (Bi-3);

(Bi-5) computer readable program code for receiving said requested coded moving picture sequence signal;

(Bi-6) computer readable program code for extracting said base coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (Bi-2);

(Bi-7) computer readable program code for merging said base coded moving picture sequence signal extracted by said computer readable program code (Bi-6) with said requested coded moving picture sequence signal received by said computer readable program code (Bi-5) to reconstruct said (i-1)-th second coded moving picture sequence signal on the basis of said i-th second coefficient information obtained from said series of i-th second picture information of said i-th second coded moving picture sequence signal, and said i-th differential coefficient information obtained from said i-th differential coded signal; and

(Bi-8) computer readable program code for inputting said reconstructed i-th second coded moving picture sequence signal from said computer readable program code (Bi-7) to be outputted therethrough,

said computer readable program code (B-1) includes:

- 5 (B1-1) computer readable program code for receiving a base coded moving picture sequence signal, said base coded moving picture sequence signal being any one of said first coded moving picture sequence signal, said 1st second coded moving picture sequence signal, and said 1st differential coded moving picture sequence signal;
- (B1-2) computer readable program code for storing said base coded moving picture sequence signal received by said computer readable program code (B1-1);
- 10 (B1-3) computer readable program code for determining a request signal for a requested coded moving picture sequence signal on the basis of said base coded moving picture sequence signal stored by said computer readable program code (b-12);
- (B1-4) computer readable program code for transmitting said request signal for said
- 15 requested coded moving picture sequence signal determined by said computer readable program code (B1-3);
- (B1-5) computer readable program code for receiving said requested coded moving picture sequence signal;
- (B1-6) computer readable program code for extracting said base coded moving picture sequence signal from among coded moving picture sequence signals stored by said
- 20 computer readable program code (b-12);
- (B1-7) computer readable program code for merging said base coded moving picture sequence signal extracted by said computer readable program code (B1-6) with said requested coded moving picture sequence signal received by said computer readable
- 25 program code (B1-5) to reconstruct said first coded moving picture sequence signal on the basis of said 1st second coefficient information obtained from said series of 1st second picture information of said 1st second coded moving picture sequence signal, and said 1st differential coefficient information obtained from said 1st differential coded signal; and
- 30 (B1-8) computer readable program code for inputting said reconstructed first coded moving picture sequence signal from said computer readable program code (B1-7) to be outputted therethrough.

90. A computer program product as set forth in claim 88, by said computer
35 readable program code (Ai),

said computer readable program code (Ai-4) has computer readable program

code for storing said (i-1)-th differential coded moving picture sequence signal generated by said computer readable program code (Ai-3),

5 said computer readable program code (Ai-5) has computer readable program code for transmitting said (i-1)-th second coded moving picture sequence signal generated by said computer readable program code (Ai-2),

said computer readable program code (Ai-6) has computer readable program code for receiving said request signal indicative of a requested (i-1)-th differential coded moving picture sequence signal to be transmitted, said request signal indicative of said requested (i-1)-th differential coded moving picture sequence signal being determined
10 on the basis of said (i-1)-th second coded moving picture sequence signal,

said computer readable program code (Ai-7) has computer readable program code for extracting said requested (i-1)-th differential coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (Ai-4) in response to said request signal, and

15 said computer readable program code (Ai-8) has computer readable program code for transmitting said requested (i-1)-th differential coded moving picture sequence signal extracted by said computer readable program code (Ai-7) whereby

said computer readable program code (A) has computer readable program code for inputting a first coded moving picture sequence signal to separate into a plurality of second coded moving picture sequence signals and a plurality of differential coded moving picture sequence signals.
20

91. A computer program product as set forth in claim 89; by said computer readable program code (Bi),

25 said computer readable program code (Bi-1) has computer readable program code for receiving said i-th second coded moving picture sequence signal,

said computer readable program code (Bi-2) has computer readable program code for storing said i-th second coded moving picture sequence signal received by said computer readable program code (Bi-1),

30 said computer readable program code (Bi-3) has computer readable program code for determining a request signal for a requested differential coded moving picture sequence signal on the basis of said i-th second coded moving picture sequence signal stored by said computer readable program code (Bi-2),

said computer readable program code (Bi-4) has computer readable program
35 code for transmitting said request signal for said requested differential coded moving picture sequence signal determined by said computer readable program code (Bi-3),

said computer readable program code (Bi-5) has computer readable program code for receiving said requested differential coded moving picture sequence signal,

said computer readable program code (Bi-6) has computer readable program code for extracting said i-th second coded moving picture sequence signal from among
5 coded moving picture sequence signals stored by said computer readable program code (Bi-2), and

said computer readable program code (Bi-7) has computer readable program code for merging said i-th second coded moving picture sequence signal extracted by
said computer readable program code (Bi-6) with said requested differential coded
10 moving picture sequence signal received by said computer readable program code (Bi-5) to reconstruct said (i-1)-th second coded moving picture sequence signal wherein said 0-th second coded moving picture sequence signal is said first coded moving picture sequence signal.

15 92. A computer program product comprising a computer usable storage medium having computer readable code embodied therein for separating and merging coded signal comprising:

(A) computer readable program code for inputting a first coded moving picture sequence signal to separate into a plurality of second coded moving picture sequence signals and a plurality of differential coded moving picture sequence signals; and
20

(B) computer readable program code for inputting a plurality of second coded moving picture sequence signals and a plurality of differential coded moving picture sequence signals to reconstruct said first coded moving picture sequence signal,

said computer readable program code (A) including a plurality of computer
25 readable program codes (A1 to Am) including computer readable program code (A-1) up to computer readable program codes (Am) wherein m is an integer not less than two;

said computer readable program code (b) including a plurality of computer readable program code (B1 to Bn) including computer readable program code (B-1) up to a computer readable program code (Bn) wherein n is an integer not less than two and
30 equal to or less than said m,

said computer readable program code (Ai) including:

(Ai-1) computer readable program code for inputting an (i-1)-th second coded moving picture sequence signal therethrough from said computer readable program code (A(i-1)), said (i-1)-th second coded moving picture sequence signal generated as a result
35 of encoding original moving picture sequence signal and consisting of a series of (i-1)-th second picture information having (i-1)-th second coefficient information, said

(i-1)-th second coefficient information including a matrix of (i-1)-th second coefficients wherein i is an integer equal to or less than m , and 0-th second coded moving picture sequence signal is said first coded moving picture sequence signal;

(Ai-2) computer readable program code for converting said (i-1)-th second coded moving picture sequence signal inputted through said computer readable program code (Ai-1) to generate an i -th second coded moving picture sequence signal, said i -th second coded moving picture sequence signal consisting of a series of i -th second picture information having i -th second coefficient information, said i -th second coefficient information including a matrix of second coefficients, each of said (i-1)-th second coded moving picture sequence signal, and said i -th second coded moving picture sequence signal is in the form of a hierarchical structure including one or more sequence layers each having a plurality of screens sharing common information, one or more picture layers each having a plurality of slices sharing common information with respect to one of said screens, one or more slice layers each having a plurality of macroblocks with respect to one of said slices, one or more macroblock layers each having a plurality of blocks with respect to one of said macroblocks, and one or more block layers each having block information with respect to one of said blocks;

(Ai-3) computer readable program code for inputting said (i-1)-th second coded moving picture sequence signal and said i -th second coded moving picture sequence signal from said computer readable program code (Ai-2) to generate an i -th differential coded moving picture sequence signal on the basis of said (i-1)-th second coefficient information obtained from said series of (i-1)-th second picture information of said (i-1)-th second coded moving picture sequence signal, and said i -th second coefficient information obtained from said series of said i -th second picture information of said i -th second coded moving picture sequence signal, said i -th differential coded moving picture sequence signal being a difference between said (i-1)-th second coded moving picture sequence signal and said i -th second coded moving picture sequence signal;

(Ai-4) computer readable program code for selectively storing said (i-1)-th second coded moving picture sequence signal, said i -th second coded moving picture sequence signal, and said i -th differential coded moving picture sequence signal; and

(Ai-5) computer readable program code for selectively transmitting said (i-1)-th second coded moving picture sequence signal, said i -th second coded moving picture sequence signal, and said i -th differential coded moving picture sequence signal to said computer readable program code (Bi);

said computer readable program code (Bi) including:

(Bi-1) computer readable program code for receiving a base coded moving picture

sequence signal from said computer readable program code (Ai) or said computer readable program code (B(i+1)), said base coded moving picture sequence signal being any one of said (i-1)-th second coded moving picture sequence signal, said i-th second coded moving picture sequence signal, and said i-th differential coded moving picture sequence signal;

(Bi-2) computer readable program code for storing said base coded moving picture sequence signal received by said computer readable program code (Bi-1);

(Bi-3) computer readable program code for determining a request signal for a requested coded moving picture sequence signal on the basis of said base coded moving picture sequence signal stored by said computer readable program code (Bi-2); and

(Bi-4) computer readable program code for transmitting said request signal for said requested coded moving picture sequence signal determined by said computer readable program code (Bi-3) to said computer readable program code (Ai);

whereby said computer readable program code (Ai) further includes:

(Ai-6) computer readable program code for receiving said request signal transmitted by said computer readable program code (Bi-4);

(Ai-7) computer readable program code for extracting said requested coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (Ai-4) in response to said request signal; and

(Ai-8) computer readable program code for transmitting said requested coded moving picture sequence signal extracted by said computer readable program code (Ai-7) to said computer readable program code (Bi);

said computer readable program code (Bi) includes:

(Bi-5) computer readable program code for receiving said requested coded moving picture sequence signal transmitted by said computer readable program code (Ai-8) from said computer readable program code (Ai);

(Bi-6) computer readable program code for extracting said base coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (Bi-2);

(Bi-7) computer readable program code for merging said base coded moving picture sequence signal extracted by said computer readable program code (Bi-6) with said requested coded moving picture sequence signal received by said computer readable program code (Bi-5) on the basis of said i-th second coefficient information obtained from said series of second picture information of said i-th second coded moving picture sequence signal, and said i-th differential coefficient information obtained from said i-th differential coded signal to reconstruct said (i-1)-th second coded moving picture

sequence signal; and

(Bi-8) computer readable program code for inputting said reconstructed (i-1)-th second coded moving picture sequence signal from said computer readable program code (Bi-7) to be outputted therethrough.

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93. A computer program product as set forth in claim 92 in which

said computer readable program code (Ai-4) has computer readable program code for storing said i-th differential coded moving picture sequence signal generated by said computer readable program code (Ai-3),

10 said computer readable program code (Ai-5) has computer readable program code for transmitting said i-th second coded moving picture sequence signal generated by said computer readable program code (Ai-2),

said computer readable program code (Bi-1) has computer readable program code for receiving said i-th second coded moving picture sequence signal from said
15 computer readable program code (B(i+1)),

said computer readable program code (Bi-2) has computer readable program code for storing said i-th second coded moving picture sequence signal received by said computer readable program code (Bi-1),

said computer readable program code (Bi-3) has computer readable program
20 code for determining a request signal for a requested differential coded moving picture sequence signal on the basis of said i-th second coded moving picture sequence signal stored by said computer readable program code (Bi-2),

said computer readable program code (Bi-4) has computer readable program code for transmitting said request signal for said requested differential coded moving
25 picture sequence signal determined by said computer readable program code (Bi-3),

said computer readable program code (Ai-6) has computer readable program code for receiving said request signal transmitted by said computer readable program code (Bi-4),

said computer readable program code (Ai-7) has computer readable program
30 code for extracting said requested differential coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (Ai-4) in response to said request signal,

said computer readable program code (Ai-8) has computer readable program code for transmitting said requested differential coded moving picture sequence signal
35 extracted by said computer readable program code (Ai-7) to said computer readable program code (Bi),

said computer readable program code (Bi-5) has computer readable program code for receiving said requested differential coded moving picture sequence signal transmitted by said computer readable program code (Ai-8),

- 5 said computer readable program code (Bi-6) has computer readable program code for extracting said *i*-th second coded moving picture sequence signal from among coded moving picture sequence signals stored by said computer readable program code (Bi-2), and

- 10 said computer readable program code (Bi-7) has computer readable program code for merging said *i*-th second coded moving picture sequence signal extracted by said computer readable program code (Bi-6) with said requested differential coded moving picture sequence signal received by said computer readable program code (Bi-5) to reconstruct said first coded moving picture sequence signal.